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THE JOURNAL OF THE TENNESSEE

State Medical Association

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H. H. SHOULDERS, M.D., Secretary and Editor

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CONTENTS

BRAIN TUMORS IN CHILDHOOD, Cobb Pilcher, M.D., Nashville	1	RESOLUTIONS	27
BRAIN ABSCESS AND MENINGITIS CAUSED BY TYPE III PNEUMOCOCCI—CURE WITH SULFAPYRADINE, Thos. F. Frist, M.D., and Elkin Rippey, M.D., Nashville	8	NEWS NOTES AND COMMENTS	28
BRUCELLOSIS, WITH REPORT OF CASES, W. R. Blue, M.D., Memphis	9	WOMAN'S AUXILIARY	28
EDITORIAL	23	MEDICAL SOCIETIES	29
WAYS AND MEANS OF IMPROVING MEDICAL LEADERSHIP	24	OTHER MEDICAL SOCIETIES	30
DEATHS	27	COMING MEETINGS	31
		ABSTRACTS OF CURRENT LITERATURE	32
		LIST OF OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION	36
		STANDING COMMITTEES	37

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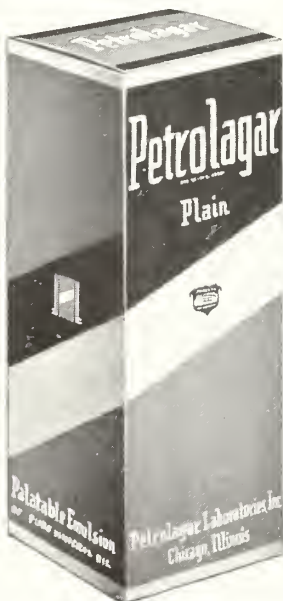
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W. M. HARDY, M.D., Asst. Secretary-Editor

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Volume XXXIII

January, 1940

No. 1

BRAIN TUMORS IN CHILDHOOD*

COBB PILCHER, M.D.,** Nashville

IT IS a common experience, when parents are told that their child has a brain tumor, to have them say, "But, doctor, I didn't know tumors could occur in children." And not a few physicians have expressed the same surprise. Furthermore, well-informed physicians are likely to believe that most, if not all, brain tumors in childhood are hopelessly incurable. Quite recently, a prominent and able pediatrician asked me if this were not true. This is the same situation of which Harvey Cushing¹ complained thirteen years ago when a well-known physician "wrote to ask if we had ever seen any recoveries after the removal of tumors of the brain in children." As may be judged from the title of this paper, brain tumors do occur in childhood, and the frequency of their occurrence is much greater than is generally recognized.

It is true that the brain tumors of childhood in general offer a somewhat worse prognosis than those of adults, because the incidence of malignant types of tumor is higher in children. Many of them, however, may be completely removed and permanently cured. The importance of realizing that brain tumors may be of many different types cannot be overemphasized, as I have pointed out elsewhere.² Some are rapidly growing and recur after a short interval.^{3, 4}

others may be only partially removed, some are radiosensitive,^{5, 6, 7, 8} some are cystic and may be cured by simple drainage of the cyst and removal of the mural nubbin of tumor which protrudes into it.⁹

Similarly, the location of a tumor plays a great part in determining its operability. Some infiltrate vital areas and cannot be touched,^{10, 11} but others can be radically extirpated.

Of the more than 225 verified brain tumors in the Vanderbilt Hospital series, forty-three, or 18.6 per cent, occurred in children fifteen years of age or under, as compared with fourteen per cent in Cushing's series.¹ One of my patients, with a huge malignant cerebellar tumor, was just under one year old. Seventeen (forty per cent of the childhood tumors, 7.2 per cent of the total series) were seven years old or younger.

SYMPTOMATOLOGY

The symptoms and signs produced by brain tumors vary with three factors: the size of the tumor, its histological type, and its location in the brain.

Ideally, we should like to make the diagnosis when the tumor is small and the only symptoms result from disturbance of function of the part of the brain involved. Unfortunately, however, this is not usually possible in children, for they rarely complain of and parents are prone not to notice or attach importance to early symptoms such as weakness of one hand, occasional diplopia, or unsteadiness of gait. For this

*Read before the Tennessee State Medical Association, Jackson, April 11, 12, 13, 1939.

**From the Department of Surgery, Vanderbilt University School of Medicine.

reason, the tumor may attain a large size, the child's vision be endangered or lost, and marked general pressure symptoms occur before the serious nature of the illness is recognized. In many instances, the symptoms are attributed to a fall, when actually the child has fallen because he could not see.

The general pressure symptoms are well known. The child begins to complain of headache and becomes apathetic. Presently he begins to vomit when the headaches are worse, and the vomiting may be projectile. He stumbles over things and finally complains or the parents notice that he cannot see well. If his eyes are examined, he is found to have choking of the discs, often with hemorrhages and exudate in the retina. He is sleepy and lethargic much of the time, yawns a great deal, breathes slowly and stertorously, especially when asleep, and his neck is likely to become stiff. As pressure becomes dangerously high, he sinks into stupor, coma, and death, unless relief is afforded. Meantime he has also exhibited some of the focal symptoms to be mentioned below. It is important to remember that in small children the sutures of the skull separate readily under pressure, and this expansion of the cranial chamber may prevent the development of pressure symptoms until the tumor has reached enormous size. McEwen's "cracked-pot" percussion note is a reliable indication of suture separation. X-rays of the skull in these children show not only suture separation, but exaggerated, fingerlike pressure markings and often erosion of the dorsum sellae.

The histological nature of the tumor affects the symptom picture largely according to the rapidity of growth of the lesion. Very malignant lesions produce a short, rapidly progressive clinical history; benign tumors a long one. Also each type of tumor has favorite sites of occurrence in the brain, particularly in children, and is therefore likely to give rise to a characteristic clinical picture. Further, several of the tumor types in childhood may contain calcium deposits which are demonstrable in X-rays. Others, such as tumors of or near the pitui-

tary gland, may produce marked endocrine symptoms throughout the body.

The third factor, the location of the tumor, determines the disturbances of neurological functions which will appear. Fifty per cent of brain tumors in children arise in the cerebellum, and nearly all of these lie primarily in the mid-line and grow into the fourth ventricle. These children first begin to be unsteady, then to stagger. They are awkward with their hands and cannot walk or use their hands when their eyes are closed. They develop a coarse nystagmus on lateral gaze and the muscles become flaccid and the joints hyperextensible, for the cerebellum greatly influences muscle tone. The reflexes are likely to be diminished. As the tumor grows larger, the brain stem is compressed and weakness and impaired sensation may appear in the extremities of one or both sides. The cranial nerves, especially the sixth and seventh, may be involved and the patient will have diplopia with internal strabismus and facial weakness. However, sixth nerve weakness is not a reliable localizing sign in itself, for it may occur with tumors in other locations. The fourth ventricle is blocked, producing an obstructive internal hydrocephalus and the alarming pressure symptoms already mentioned. The lower cerebellum is pushed down into the foramen magnum and the neck is held stiffly to protect it.

Tumors of the cerebral hemispheres are likely, sooner or later, to involve the motor pathways. If the tumor is near the surface, focal, Jacksonian convulsions occur. These seizures usually begin in one group of muscles of the opposite side of the body, then spread to become generalized. Such a convulsion indicates localized irritation of the motor cortex. Soon there appears weakness and finally paralysis of the contralateral face and extremities, the reflexes on the affected side are exaggerated, ankle clonus may be present, and the great toe turns upward when the sole of the foot is stroked (Bazinski's sign). If the lesion is in the frontal lobe, apathy, loss of memory, and personality changes may occur. If it is in the left hemisphere of a right-handed child, speech will be impaired, if it is deep

in the temporal or occipital lobe, loss of vision in the opposite half of the visual field of each eye will occur.

Another common tumor of childhood is the congenital craniopharyngioma which arises from primordial cells of the pituitary region and grows upward under and in front of the optic chiasm producing early loss of vision in the lateral half of each visual field and later optic atrophy, papilledema, and blindness. It also compresses the pituitary and overlying portion of the brain, producing a pale, waxy skin, low basal metabolic rate, polyuria, and increased thirst and somnolence.

Other less common sites of tumor growth in children are the pineal gland with loss of conjugate movement of the eyes upward, bilateral impairment of hearing and sometimes premature sexual development; the pons, with multiple, bilateral cranial nerve palsies; and the ventricles with intermittent bouts of severe headache and vomiting, each usually followed by a period of remission.

DIAGNOSIS

The final diagnosis must rest upon careful detailed neurological study, but it is well to remember a noteworthy statement by Percival Bailey:¹² "Wherever there is a steadily increasing alteration of nervous function the presence of a tumor should be suspected." Differentially, one may suspect gastrointestinal disease because of the vomiting, eye disease because of loss of vision, and disease of the sinuses because of headaches, but the presence of two or more of these symptoms clearly suggests increased intracranial pressure. Encephalitis and meningitis can usually be eliminated because of their febrile and often acute courses. Epilepsy is a point of great difficulty, and it is essential that every epileptic child have careful neurological study to make certain that a tumor is not the cause of the seizures. Often the presence and location of the lesion can be determined definitely only by X-ray demonstration of the ventricles after injecting them with air—a simple and relatively harmless procedure.

It will be noticed that I have not men-

tioned lumbar puncture. I cannot over-emphasize the danger of this procedure in the presence of advanced intracranial pressure. Sudden reduction of pressure in the spinal canal may result in a fatal herniation of the medulla into the spinal canal.

CASE REPORTS

As illustrations of symptom pictures and therapeutic results which may be expected with different tumor types in various locations, I wish briefly to report five cases.

Case I. (V. U. H. No. 82500.) E. G., white, male, aged thirteen, was admitted December 14, 1936. Three weeks previously he first noticed double vision, which persisted intermittently, and his parents observed that he was unsteady on his feet. For two weeks he had complained of headache, and several times, when the headache was very severe, he vomited. There were no loss of vision, convulsions, or paralysis.

On examination, he had choked discs, and the X-rays showed early pressure markings in the skull. There was a coarse nystagmus on looking to either side. The right arm was awkward in its movements and he staggered toward the right side when walking. There was no weakness of the extremities.

At operation, a large, soft, reddish purple tumor filled the fourth ventricle and infiltrated the cerebellar vermis and hemispheres. A frozen section showed it to be the dreaded medulloblastoma, the most malignant of the gliomas of childhood. This tumor, however, is very radiosensitive. Accordingly only enough to relieve the obstruction of the fourth ventricle was removed.

The post-operative recovery was rapid and uneventful. Intensive irradiation was given as soon as the wound healed. Recovery was complete, and there has been no sign of recurrence until the present time (twenty-eight months since operation).

Comment.—This boy has survived far longer than most cases with this type of tumor, but it is still likely that a recurrence will take place.

Case II. (V. U. H. No. 60718. Referred by Dr. Champ Gully, DeKalb, Mississippi.) F. S., white, male, aged six, was admitted

January 2, 1934, with a history of a fall three months previously, following which it was noticed that his vision was very poor. He soon became quite blind, and the right eye was turned inward for a period of about two weeks. His neck was somewhat stiff, but he did not stagger or complain of headaches.

On examination, he was blind, and the fundi showed choking of the discs with advanced optic atrophy. There was a slight weakness of the right side of the face and the right arm and leg. Some incoordination on the right was probably due to weakness. X-rays showed mark separation of the sutures and convolutional atrophy.

At operation, a blunt needle was inserted into the left occipital lobe, for the purpose of tapping the ventricle. Instead, it entered a cyst containing a large amount of thin yellow fluid. The area was explored, and a huge partly cystic tumor removed. This was found to be a papilloma, arising from the choroid plexus of the ventricle.



Fig. 1.

The child recovered satisfactorily except for the permanent loss of vision (Fig. 1), but the tumor soon recurred, and large masses of it were removed April 23, 1934, and again February 2, 1935. Finally, on July 25, 1935, when symptoms had again recurred, a radical amputation of the occipital lobe and part of the parietal lobe was done, and this was followed by radiation

therapy. In the nearly four years since that time, there has been no recurrence of cerebral symptoms.

However, the poor boy's troubles were not over, for on October 2, 1936, he returned with symptoms of compression of the lower spinal cord and a large transplant of the original papillomatous tumor was removed from the spinal canal. Some of the cord symptoms have persisted, but there has been no further appearance of the tumor.

Comment.—It is noteworthy that this child's first symptoms were attributed to a fall, whereas undoubtedly the fall was the result of his failure of vision. The separation of the sutures prevented him from having headache. The case illustrates, also, the value of the persistence in the treatment of a tumor so placed that it could be repeatedly attacked.

Case III. (V. U. H. No. 59105. Referred by Dr. W. P. Kemp, Springfield, Tennessee.) T. E., a white boy of twenty-two months, had a sarcoma of the chin removed by Dr. Beverly Douglas in October, 1933. There was no recurrence and no other symptoms until September, 1934, when he had a fall. The mother then noticed that he moved the right hand poorly. He was returned to the hospital, where he was found to have early choked discs and a right-sided weakness. Ventriculograms showed a large left frontal tumor, and this was removed apparently completely. (Fig. 2.) Microscopically it was a metastatic sarcoma. In spite

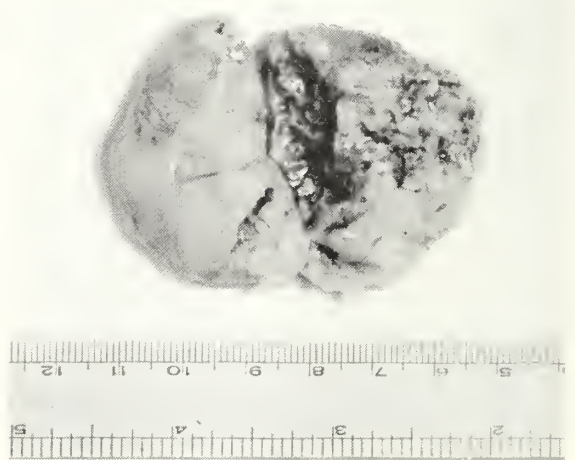


Fig. 2.

of X-ray therapy, the child soon developed recurrent signs of cerebral compression and died at home less than two months after operation. It seems likely that he had other undiscovered metastases in the brain.

Comment.—This is another example of a fall which was really the result rather than the cause of cerebral symptoms. The route of spread is unknown, since no evidence of tumor in the lungs was discovered.

Case IV. (V. U. H. No. 90307. Referred by Dr. J. B. Phillips, Chattanooga, Tennessee, and Dr. H. M. Roberson, Pikeville, Tennessee.) W. B., male, white, aged eight, entered the hospital February 28, 1938, with a history of attacks of severe headache with vomiting for a year. For about a month, he had been listless and drowsy, had used his left hand poorly, and his mouth had drawn to the right when he smiled. His mother noticed that he cried very easily. He had a number of nosebleeds.

On examination, the discs were choked, and he showed marked weakness of the left face and extremities, accompanied by ankle clonus. When an object was grasped with his left hand, he had difficulty in releasing it (a sign which usually points to the frontal lobe on the opposite side).

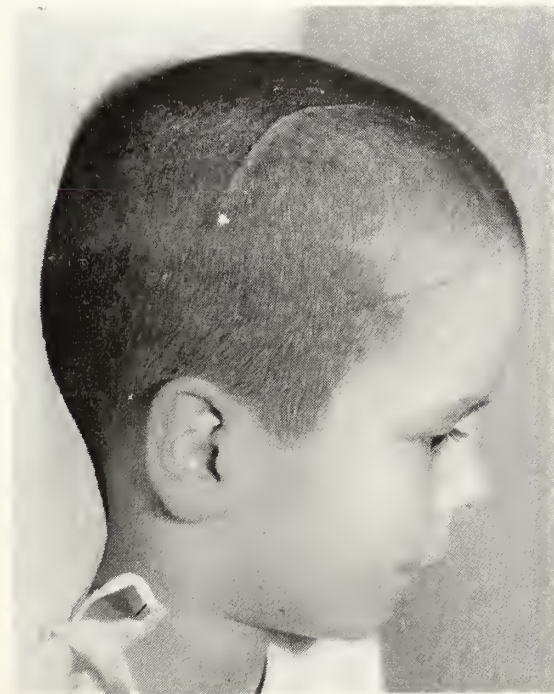


Fig. 3.

At operation, a huge, partly cystic tumor was completely removed from the right frontal lobe. The tumor was a benign lesion called astrocytoma. Recovery was rapid and there have been no symptoms since his discharge from the hospital. (Fig. 3.) A letter from the patient, January 23, 1939, states: "I sure feel good. I never have the headache now. I weigh eighty-five pounds and am fifty-eight inches high."

Comment. — The slow development of symptoms in this child indicated a benign lesion. This type of tumor, if completely removed, rarely recurs, and it is likely that he is permanently cured.

Case V. (V. U. H. No. 84925. Referred by Dr. G. W. Burchfield, Maryville, Tennessee, and Dr. W. H. Arrants, Sweetwater, Tennessee.) M. R. W., a white girl, aged fifteen, was admitted April 4, 1937. Her vision had been slowly failing and she had had increasingly severe headaches for five years. For two years the headaches had come in sudden attacks, with vomiting and retraction of the head. She noticed that her senses of smell and taste were poor, and she had ringing in her ears. Her weight had fallen fifteen pounds in the year before admission.

Her vision was gone in the right eye, and she could barely count fingers with the left. The discs were choked and atrophic. There was a right facial weakness, but no other conclusive neurological signs.

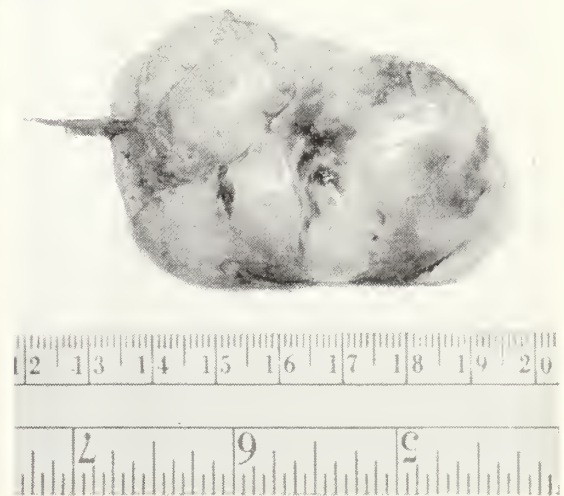


Fig. 4.

Ventriculograms showed the tumor to be deep in the left hemisphere, and at operation it was found to be a large, encapsulated mass lying in the left lateral ventricle and attached by only a thin strand of choroid plexus. It was removed intact and proved to be a meningioma, a tumor which rarely occurs in the ventricles. (Fig. 4.)

She had a rather prolonged convalescence. Her vision slowly improved, but is still very poor. There have been no other symptoms to date. (Fig. 5.)

Comment.—This patient is undoubtedly cured. It is an example of a very rare tumor and, incidentally, is cited in the recent book on the meningiomas by Cushing and Eisenhardt.¹⁴

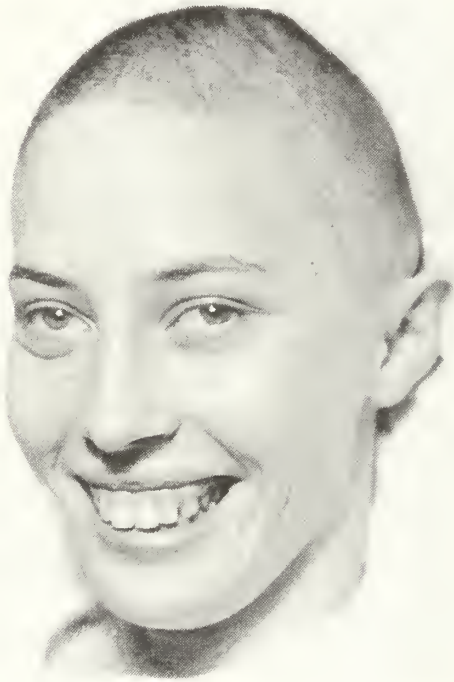


Fig. 5.

TREATMENT

Regarding the treatment of brain tumors in general, the only therapy is operative removal. One type of cerebellar glioma (Case I) is radiosensitive, but even this should be diagnosed histologically and pressure relieved by operation before irradiation should be begun. The technique of brain surgery improves year by year. The use of a powerful suction apparatus, of electrosurgical methods, and of meticulous care and gentle-

ness as well as of experience and judgment render our results better and better. In my short twelve-year span, the specialty has been improved enormously. The mortality rate of my major operations in the series of children reported herein is 18.7 per cent*—far higher than the eight per cent operative mortality for all neurosurgical operations (recently determined for a four-year period), but still offering much hope to these distressingly afflicted children.

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*This figure does not include minor procedures such as ventricular punctures and air injections, which would materially reduce the percentage. It may be compared with Cushing's¹³ figures of 25.2 per cent, 11.2 per cent, and 15.8 per cent, respectively, for the three most common tumors of childhood (cerebellar medulloblastoma, cerebellar astrocytoma, and craniopharyngioma).

DISCUSSION

DR. NICHOLAS GOTTEN (Memphis): A few years ago one had to be an optimist to be a neurological surgeon, but now one can find pessimists among this group, and they get along and seem to enjoy their work.

A few months ago I had a patient in the hospital from Hornsby, Tennessee, and his family came with him, and we made a diagnosis of brain tumor. I told his family he should have an operation, and his brother said, "What, you mean to operate on his brain? He will surely die."

It was my great pleasure to operate upon this patient and to know that before he left the hospital he had a mild obstruction to his urethra which was taken care of by a urethral dissection, and the patient went home and subsequently died of a kidney complication, so that the brain surgeon in some instances offers more hope than the urologist.

I can only emphasize some of the points which Dr. Pilcher has already covered; that is, that the symptoms of brain tumor and brain tumors occur quite frequently in children, but fortunately I think they are being recognized much earlier than they used to be. As Dr. Pilcher has pointed out, we used to see these patients when they were blind. Now we see them when they are in the early stages of the disease because we are recognizing the fact that tumors occur in children. The pathological types, though exactly similar to those tumors occurring in elderly people, have some variations according to age, as Dr. Pilcher has brought out. The astrocytomas occur more frequently in the young, and certainly the cerebellar tumors are more frequent, whereas in the elderly people the disease seems to be mostly in the cerebrum.

The treatment is entirely operative, and I am happy to say that I believe the operative mortality of brain tumors is around fifteen per cent. I was interested in Dr. Rankin's paper, where he had a mortality of around six to ten per cent in his cases, and the mortality in brain tumor cases is certainly not greatly in excess of that, which is very favorable.

Many of these patients, even though they have malignant lesions, will live for many years, and consequently give the family the pleasure of their lives. I received a card a few days ago from a family whose child I had operated upon and who had received extensive radiation of a malignant tumor. This child has now gone four years and is apparently doing well, though we know the tumor probably will recur.

A few days ago I received another letter from a family whose child had been almost completely blind before operation. She has recovered some vision and is getting along fairly well, though there is evidence of recurrence.

At any rate, we see that many of these children may be cured, a larger percentage may be relieved, and certainly the advancement in neurosurgery will be improved as time goes on, and will continue to be of greater benefit.

DR. FRAZIER BINNS (Nashville): Mr. Chairman and Members of the Medical Society: I have certainly enjoyed Dr. Pilcher's presentation of brain tumors in children, and with these five cases he has certainly shown the difficulties encountered, but certainly the results reported should encourage us, especially when dealing with cases similar to the last two mentioned; that is, the astrocytoma, and Case V., the meningioma.

It seems the incidence of failing vision in these cases reported is true to form, and certainly if the best results are to be obtained, we as pediatricians or physicians have a great responsibility, for the neurosurgeon must depend upon our developing a habit of mind that the central nervous system is a part of the human body.

Observation of the child in action is of vital importance, and if one watches spontaneous behavior such as gait, grasping, play, and so forth, rather than placing too much reliance on details of examination, much can be gained. Of course, that should not be done to the exclusion of the intelligent and accustomed use of the ophthalmoscope. Certainly the use of the ophthalmoscope is evidence of a decent respect for the nervous system.

Dr. Pilcher has clearly presented the various types of brain tumors found in children, and the operative procedure for relief, but from the standpoint of early diagnosis on the part of the pediatrician I feel that we should realize very definitely that the brain or the nervous system in an infant, or even in the child, is not architecturally or physiologically finished. With this in mind, obscure intermittent signs and symptoms in childhood may be explained on the basis of an expanding lesion within the cranial vault.

DR. COBB PILCHER (closing): I should like to thank the discussers for their remarks and to re-emphasize the fact which Dr. Binns has just stated, that if we are going to get the best results in treating brain tumors, we must diagnose them early.

This morning at four o'clock a physician brought to me his daughter who, six weeks ago, had her right eye turned in. He took her to a local ophthalmologist who thought that they had better watch her a while, so they watched her until yesterday, when her left arm and leg were paralyzed, and now they bring her in six weeks later. Six weeks ago our chances would have been much better than they are at the present time.

BRAIN ABSCESS AND MENINGITIS CAUSED BY TYPE III PNEUMOCOCCI—CURE WITH SULFAPYRADINE

THOS. F. FRIST, M.D., and ELKIN RIPPY, M.D., Nashville

WE WOULD like to present another very remarkable case to substantiate the extreme efficacy of sulfapyradine in treatment of pneumococcic infections, not only of the pulmonary systems, but elsewhere in the body.

This is a case of a forty-eight-year-old white female who first became ill on February 6, 1939, six weeks prior to her admission to the hospital. Her initial symptoms consisted of generalized aching and weakness. She had a mild fever and the other findings that usually lead to a diagnosis of influenza. During the first few days of this illness she developed otitis media of the left ear. The drainage continued and did not subside until after a tonsillectomy, which was done two weeks following the myringotomy. However, concurrently she developed severe deep-seated pain in the region of the left ear, and under the left jaw to the mid-line of the chin. The pain was so severe that it was not relieved by the use of codeine. She had some mild visual disturbances, and objects seemed to dance before her eyes. She was having a daily temperature of ninety-nine degrees to 100.2 degrees. All of these symptoms persisted, and the pain gradually became more severe. At this time, six weeks after the onset of symptoms, a careful neurological examination was done, and there were absolutely no localizing signs excepting a doubtful Babinski on the right, and all reflexes were quite hyperactive. Because of the history a tentative diagnosis of brain abscess was considered, even though there were no choked discs, stiff neck, visual, or speech defects, or any signs that would aid one in localizing the abscess. X-ray films of the mastoid cells were negative.

The following day the patient became quite nauseated and vomited in a projectile manner. A few moments later she developed an even more excruciating headache, experienced a hard-shaking chill, lapsed into a semicoma. She was taken to a local hospital, where her temperature was found to be 104 degrees, and she had all the signs

of a purulent meningitis, including dilated pupils, stiff neck, positive Babinski, positive Kernig and hyperactive reflexes. She was quite irritable and restless. A spinal puncture was done; the fluid was under considerable pressure, and was milky in appearance. The spinal cell count was 4,600, all polymorphonuclears. Globulin was two plus. There were no organisms demonstrable on stained smears. Her white blood count was 21,000. Her hemoglobin was eighty-eight per cent.

Immediately she was given four grams of sulfapyradine. Four hours later she was given two grams, and again in four hours two grams, and every four hours thereafter she was given one gram.

Fourteen hours after the administration of the first dose of sulfapyradine the patient was rational. Her temperature was normal. The white blood count was 17,200, and the spinal fluid cell count was 3,600, all being polymorphonuclears. There was no change in the hemoglobin.

The original spinal fluid cultured in two separate laboratories, both of which reported a Type III pneumococci. Twenty-four hours after the first dosage of sulfapyradine the spinal count was 460 polymorphonuclears. The sulfapyradine blood content was thirteen. The patient continued to improve rapidly, and within six days she was asymptomatic and there were only eighteen polys in the spinal fluid.

Nine months have elapsed since this illness, and the patient is now entirely well with no neurological findings indicative of any residual process in brain or spinal cord.

We present this case as having originally had a middle ear infection that extended either by lymphatics or directly to the petrous portion of the temporal bone, resulting in the clinical picture of an abscess in the lower portion of the temporal lobe just beneath the dura. Finally the spontaneous rupture of this abscess into the dural space caused a meningitis which proved to be due to a pneumococcus Type III organism, and a subsequent cure was effected by the use of sulfapyradine.

BRUCELLOSIS, WITH REPORT OF CASES*

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IN A PREVIOUS presentation before this association in April, 1935, I outlined a part of the history of this disease and reported the results of a survey made in Memphis, Tennessee, for the year of 1934, in which twenty-seven physicians reported thirty-five cases of *Brucella* infection. At that time questionnaires, sent to the state health departments of Tennessee and surrounding states and to other large cities in these states, revealed the fact that little or no legislation existed as to the control of the sale of cow's milk or goat's milk from dairies whose cows or goats were infected with abortion fever or Bang's disease.¹ Recent questionnaires revealed that little additional legislation has been enacted in this respect.

In this presentation I wish to incorporate the more important phases of twenty cases of brucellosis we have observed at the Crisler Clinic and the Methodist Hospital.

Man acquires this infection by the ingestion of raw, contaminated dairy or meat products, or by the direct association with infected animals or their by-products, or through infection gained in experimental fields. The *Brucella abortus* or bovine strain is the least virulent, and there exists in many individuals a partial immunity to this strain to such an extent that many of those infected eventually recover without treatment. From this fact there has arisen a conception, on the part of some, that the patient so infected will recover regardless, so why worry about it. This misconception is not justified by those who have devoted a great deal of time and study to the subject. The bovine strain does assume very virulent forms, to say nothing of the *Brucella melitensis* (caprine), porcine, or suis varieties which are always more virulent in their manifestations. For those who doubt the pathogenicity of this infection, I can personally vouch that it is ravishing in its

effect, and as a victim of the disease in 1933 and 1934 I first became interested in the subject. Brucellosis probably dates back to Hippocrates about 400 B.C., and David Bruce in 1886 isolated the organism *micrococcus melitensis* from the spleen of a victim of the disease and reproduced it in monkeys.² The scarcity of pathological reports is due to the low mortality rate, the lack of interest in the subject, and the absence of autopsy reports. One report by Wohlwill of Berlin in 1932 mentioned twelve fatal cases in Denmark, ten in America, and four in Germany.³ This is interesting in the light of present-day reports by Menefee, Poston, and Parsons of Duke University.⁴ Wohlwill describes his findings in the organs of a woman, sixty-seven years of age, who died from the infection: "Peculiar nodular foci in the spleen, lymph nodes, and bone marrow. In the liver were focal necroses with total destruction of cells." He considered the nodular formation as characteristic and believed the infection spread by the blood stream with the reaction primarily in the reticulo-endothelial system. Compare this with the findings reported from Duke University which are in part as follows: "The cut surface of the lungs, as well as those of the liver and spleen, showed multiple, small, well-circumscribed, pale, opaque nodules. Generalized lymphadenopathy particularly in the retroperitoneal region and at the liver hilus. Section of the lymph nodes warranted a diagnosis of Hodgkin's disease, and the culture from the glands proved positive for *Brucella* organisms." This stimulated their efforts in further study on three other cases which had previously been diagnosed as Hodgkin's disease. Rebiopsy of these cases showed positive cultures for *Brucella* in each instance.

A review of the literature today reveals the fact that the clinician is conscious of *Brucella* infection, and whereas formerly discussion was limited largely to investiga-

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tive work, today it consists of clinical case reports along with the investigation. The disease is classified as acute, chronic, and latent.

The diagnosis will rest largely on laboratory procedures, but not without complete study and proper evaluation of the history and existing symptoms. The procedures of value are:

1. Agglutination test. Using fresh venous blood only; dry smears notably give pseudo positive tests. A positive agglutination with a titre of one to twenty-five is now considered by some authorities as valuable, provided there are clinical manifestations of the disease.⁵ Previously a titre of one to eighty was considered necessary for the diagnosis of an active infection. A negative test does not rule out the infection. The more acute cases show a higher titre and a higher percentage of positive agglutinations. Many of the chronic and latent cases will have a negative agglutination so that it is not wise to depend on the agglutination alone.

2. The opsono-cytophagic test as advocated by Huddleson and his associates. This procedure, theoretically, should be most valuable, as one's resistance is based on the ability of the polymorphonuclear leucocytes to phagocytize the *Brucella* organisms in large numbers if that patient's resistance against the infection is marked or the inability of the leucocytes to engulf the organisms if the resistance is low. It is considered by Huddleson, Johnson, and Hamann that individuals have developed immunity for *Brucella* if sixty per cent or more of the polymorphonuclear leucocytes show marked phagocytosis. If as many as forty per cent of the polymorphonuclear cells show moderate to marked phagocytosis, the patient may be infected and has not yet developed any immunity or may be unaffected. The engulfing of one to twenty bacteria by polymorphonuclear leucocytes is indicative of slight phagocytosis and still less immunity and so on.⁶ This evidence should always be correlated with other diagnostic findings. Since some authorities find marked phagocytosis present in cases who have active infection, as is proven by clin-

ical manifestations and other positive evidence, such as positive agglutination or positive blood culture, it remains to be proven that this test will be entirely practical for everyday use as a diagnostic measure *per se*. It should be most valuable in arriving at the selection of donors for immune blood transfusions for treatment. Previously we had no method of determining whether a donor was immune or not. In our series of cases we have several who showed a marked phagocytosis in the presence of positive agglutination as well as positive skin tests, and whose history and symptomatology warranted a diagnosis of an active infection, and further, these patients were definitely benefited by the treatment for brucellosis.

3. The intradermal skin test in which there is injected intradermally a given amount of either brucellin, brucellergin, or some similar nucleo protein substance; or the intradermal injection of a given amount of suspended killed organisms as represented by one or more of the varieties of undulant fever vaccine obtainable, the same vaccine being used for skin testing as is used in treatment of the disease. In the use of brucellergin one-tenth of a cubic centimeter is injected intradermally and the reaction noted. An area of redness and induration from five-tenths to seven centimeters in diameter results in forty-eight hours if the test is positive. The absence of reaction is indicative of a negative test. In using the vaccine as a skin test, we inject four-hundredths of a cubic centimeter of Angle (Jensen-Salsbery) vaccine or one-tenth of a cubic centimeter of Harris vaccine intradermally. This test is observed from four to seven days after injection, disregarding the early reaction. A positive test gives an area of redness and induration of about one to five centimeters in diameter with a central area of necrosis. This is frequently followed by a small ulcerated area which heals slowly, leaving a scar. Occasionally one will react to this with rigors, fevers, and sweats. I have never seen an alarming reaction. We prefer the vaccine as originated by Angle, as it is more dependable, and we have difficulty in keeping the other

preparations sufficiently fresh for use.⁷ Dr. Angle has done extensive cross testing with the vaccine and brucellergin and finds the end results check very closely. In testing 642 school children he found 10.1 per cent positive tests in white children as compared to 2.7 per cent in colored children. This he attributed to the fact that the white children ingested more raw milk (fifty-one per cent), while 92.9 per cent of the milk consumed by the colored children was pasteurized or canned milk. Cross testing in school children for tuberculosis proved that colored children, who represented the highest per cent of positive skin tests for tuberculosis, showed the lowest per cent for brucellosis, which would indicate there is no correlation between the two.⁷ Further studies by Angle and his associates in 7,122 school children revealed 642 or nine per cent with positive skin tests for *Brucella*, and with the use of questionnaires he was able to demonstrate, in a part of this series, that 38.7 per cent of these school children had two or more symptoms of chronic infection, tuberculosis being eliminated (and who also showed positive skin tests for *Brucella*). This study would certainly indicate the necessity of further investigation of chronic brucellosis as a cause for many of our complaining children.⁹ Skin testing raises the titre of agglutination so that a previous negative agglutination may be followed by a positive. It also raises the opsono-cytophagic index.

4. Blood cultures, if positive, are diagnostic, and the culture must be grown under carbon dioxide tension or by some other special method. At present we find difficulty in getting positive cultures, but the subject is being studied by the National Institute of Health, under Dr. Alice Evans, and the outlook is very bright for more adequate cultural methods in the near future.⁹

5. The complement fixation test is advised by some.

6. A careful history as to the milk and meat supply, the habits, the occupation, previous health, and animal association is essential in arriving at a diagnosis, and information thus gained which may be questionable demands an investigation. Fif-

teen per cent of the cases of brucellosis will show a cross agglutination with tularemia which can be ruled out by further study. Those who ingest contaminated dairy products from cows or goats infected with *Brucella* will show positive agglutinations. McBride, Daniel, and Poston, who studied 210 orphanage children using infected milk from a cow carrying a low-grade porcine strain, reported as follows: "Only two developed active infection, 14.6 per cent of forty-eight tested had a positive agglutination without evidence of the disease, and the agglutination disappeared when the milk was discontinued."⁸

Symptoms depend upon the acuteness and severity of the infection. In the acute case the onset may be sudden with severe rigors, fever, and sweats, temperature ranging between 100 and 105, headache, generalized aching, anorexia, prostration, etc. The majority of cases usually present a more gradual onset with malaise, chilly sensation, fever, sweats, weakness, loss of weight, muscle stiffness, insomnia, disturbing dreams, and cough is a frequent symptom. The symptoms are less marked than in the acute cases. One authority has stated that any case of "flu," so called by the patient, that exists for a month should be investigated for brucellosis. The infection may be confused with typhoid, malaria, influenza, tuberculosis, septicemia, pyelitis, rheumatic fever, typhus, endocarditis, tularemia, and other diseases. The red blood count will usually show a secondary anemia, the white cell count either being normal or a leucopenia being present with a relative lymphocytosis. In the presence of complications there may be expected a leucocytosis with a relative polynucleosis.

Complications. — Cholecystitis, orchitis, oophoritis, salpingitis, vesiculitis, prostatitis, nephritis, pyelitis, meningitis, neuritis, arthritis, spondylitis, osteomyelitis, psychoses, bronchitis.

The treatment in the past has been unsatisfactory and many preparations have been used. In our opinion, the most valuable are vaccine, autogenous or stock, serum as used by Foshay of Cincinnati, immune blood transfusions (properly se-

lected), and mirion. Intravenous typhoid vaccine therapy is used by some clinicians, but we have had no experience with it. Recently there have been many favorable reports on the use of sulfanilamide in this infection, and it has proven satisfactory in a small number of cases in our experience; however, I believe that most authorities will agree that it is most valuable in the acute and subacute cases and less so in the chronic stages. Sufficient time has not elapsed since its introduction to state whether or not there will be recurrences in those cases in which it has been used. We do not recommend the arsenicals and other forms of chemotherapy that are more liable to produce liver damage. Rest in bed is essential for a long period of time, together with a well-balanced diet and other hygienic measures.

There is nothing new in our presentation, but we trust that it may be of some value to those interested in the subject. Brucellosis will be controlled when the physicians demand that something definite be done regarding the sale of contaminated dairy and meat products, and when sufficient legislation is enacted to control the spread of the infection through dairy herds, as well as the cattle that supply our meat products. Pasteurization is recognized as a very valuable factor as it prevents the spread of the infection and yet from information gained recently I find only one city in this territory, St. Louis, Missouri, that demands compulsory pasteurization, and they even demand pasteurization of certified milk. In other cities a process of education is being utilized to gain the objective sought.

In closing I wish to express my appreciation to Doctors Whitman Rowland and T. C. Moss for their untiring efforts and advice in the study of our cases and to the other gentlemen who have so kindly referred patients for observation.

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CASE REPORTS

Case No. 1

J. S. M., forty-seven, male, white, policeman. Referred by Dr. Wilson Searight, October 9, 1935. Chief complaint: tires easily, fever, weakness, rigors, and sweats—two months' duration. Agglutination for Brucella on October 1, 1935, positive 1:640, W. B. C. 7,100, differential count polys 60, lymphs 36, L. monos 4. Treatment consisted of rest in bed, J. and S. vaccine, one series, following which there was a rise in temperature. The vaccine was begun again in small doses. Following the second dose he developed left orchitis severe which demanded ice bag, etc. Smears for gonococcus negative, vaccine discontinued. There was a rise in blood pressure 160/90 with headache, nausea, vomiting, and tendency of edema of the face.

Admitted to Methodist Hospital on November 12, 1935. Temperature 99 to 101, oliguria, delirium. Urine showed albumin 1 plus, 1 to 3 pus cells, 25 to 30 red blood cells, R. B. C. 4,450,000, leuc. 13,000, polys 68, N. P. N. 86, creatinin 3, Kahn negative, X-ray sinuses negative. Treatment: diet, glucose, rest, etc. Discharged from hospital December 4 improved. Following the discharge from hospital further vaccine was given in small doses, after which the fever subsided and did not return. Patient re-

turned to work on April 1, 1936, with no fever and has had no return of symptoms.

Case No. 2

W. W. L., thirty-four, male, white, clerical work. Seen September 10, 1936. Referred by Dr. J. B. Blue as to the cause of continued fever which had persisted since July, 1936, at which time he began having fever, aching, weakness, and loss of weight, tired easily, and had shortness of breath on exertion. Temperature range from 99 to 100 daily. On examination we found poorly-nourished male, blood pressure 120/80, temperature 100, heart rate 85 to 90, regular, with a presystolic and mid-diastolic murmurs at the mitral area transmitted to the axilla. Lungs negative, tonsils red and ragged, Kahn negative, leuc. 8,800, polys. 67, lymphs. 33, malaria negative, B. M. R. plus one per cent, teleoroentgenogram revealed a normal sized heart. E. K. G. negative.

He was advised to rest and later have a tonsillectomy. This was followed by normal temperature for about ten days, after which time the temperature rose again. At this time the agglutination was negative, opsonocytophagic test was positive, skin test positive. He was given vaccine, one-tenth of a cubic centimeter intramuscularly, which was followed by rise in temperature of 100. In four days he was given two-tenths of a cubic centimeter which produced a temperature of 101. Later he received three-tenths of a cubic centimeter followed by temperature of 103, and still later four-tenths of a cubic centimeter which was followed by a temperature of 104 to 105 with chills, fever, sweats, and vomiting. This reaction persisted for forty-eight hours, at which time he was admitted to Methodist Hospital, October 15, 1936. He received glucose intravenously, and his temperature returned to normal two days after admission. He was given mirion, one ampule, intravenously, twice daily for seven days. There was no further rise in temperature, and he was discharged from the hospital October 22. He continued the rest with a well-balanced diet, etc. The heart rate and temperature remained normal, and he returned to work

on January 1, 1937, and has had no further rise of temperature since.

Case No. 3

H. G. O., forty, male, white, clerical work. Onset of illness about April 1, 1935, with weakness, headache, fever, and sweats. Consulted Dr. Wilson Seawright, who admitted him to Baptist Hospital for diagnosis. I saw him in consultation with Dr. Seawright. Physical examination was negative, blood culture negative, R. B. C. 4,480,000, hgb. 80, leuc. 7,000, polys. 62, lymphs. 38, agglutination positive 1:320, urine negative, temperature range 99 to 101.

Patient received treatment at home consisting of two series of J. and S. undulant fever vaccine, maximum dose one and one-half cubic centimeter, rest in bed, well-balanced diet, recovery complete, returned to work in sixty days from onset. No return of symptoms.

Case No. 4

C. R. M., sixty-one, female, white, housewife. Admitted to Methodist Hospital on December 10, 1936. There was a history of recurrent fever and gaseous distention over a period of years. She had suffered from colitis and pleurisy previously.

On examination we found a poorly-nourished female, color muddy, tenderness in the right hypochondrium, heart and lungs negative, R. B. C. 4,250,000, hgb. 82.3, leuc. 6,800, polys. 72, lymphs. 28. Urine negative. On admission agglutination positive 1:160, opsonocytophagic showed moderate phagocytosis, skin test positive. Cholecystogram revealed a chronic cholecystitis and cholelithiasis, G. I. series negative. Later urine showed 100 to 110 pus cells, 8 to 10 red blood cells. Gastric analysis normal, X-ray of the chest negative. Vaccine was begun at the hospital.

She was discharged from the hospital on December 26 improved, and further treatment was carried out at home. She had a return of symptoms in September, 1937, and was advised to have a second series of vaccine. Complete recovery cannot be expected without a cholecystectomy.

Case No. 5

J. A. E., fifty-two, male, white, insurance agent. Seen in the clinic September 23, 1935. Chief complaint: pyuria, cough, fever, bronchitis. Poorly nourished, tall, ptotic type. Blood pressure 130/90, tonsils showed 2 plus enlargement, ragged. Heart negative, rate 90 to 100. Temperature 100. Few mucous and crackling rales over the bases. Agglutination negative, opsonocytophagic positive, skin test positive, leuc. 6,900 with 63 polys. Malaria negative, urine 6 to 8 pus cells per H. P. F. Prostate 2 plus enlargement, nonobstructive. Twelve to 15 pus cells in urine following prostatic massage.

He was sent home to take vaccine under supervision of his physician. On October 28, 1935, returned, stating he had definitely improved, but had return of fever, headache, and weakness. Agglutination was positive 1:200, W. B. C. 7,500, polys. 54, R. B. C. 4,950,000, and 84.5 hgb. Cholecystogram revealed a large gall bladder with poor function. Heart negative, lungs showed a few scattered mucous rales. X-ray chest revealed bronchiectasis.

He was advised to take sulfanilamide, given gall-bladder diet, hydrochloric acid, and potassium iodide. He later received a second series of sulfanilamide. The last report is that he is entirely free of fever and improved.

Case No. 6

O. N. R., forty, female, housewife. Seen in the clinic September 16, 1936. Chief complaint: fever and weakness for three years, cough, and some precordial pain. In 1935, had a positive agglutination for undulant fever and a positive skin test. Received four or five series of undulant fever vaccine. In 1936, pregnancy was interrupted by home physician on account of kidney insufficiency with hypertension.

Well developed, fairly well-nourished female, flushed facies, weight 124 pounds (a gain of thirteen pounds since April). Heart regular, rate eighty-eight. A rumble is heard before the first sound followed by a systolic murmur transmitted to the axilla. Blood pressure 140/100, temperature 99.3

to 100, lungs show some roughness and mucous rales at the bases, pelvic examination negative. Had been taking prontosil, forty-five grains daily for five days, when seen. Blood culture was negative, N. P. N. 29, R. B. C. 4,160,000, hgb. 77.4, leuc. 9,000, polys. 67, B. M. R. zero normal, urine negative, X-ray of the lungs negative, X-ray of the sinuses negative. G. I. series revealed a chronic appendix. Agglutination negative, opsonocytophagic slight to negative phagocytosis.

Treatment: Sulfanilamide, sixty grains daily for five days. This was later followed by a third series of eighty grains for two days and sixty grains for four to six days. When seen on December 9 weighed 127 pounds, free of fever and very much improved.

Case No. 7

J. A. S., sixty, female, housewife. Admitted to Methodist Hospital October 25, 1938. A history of recurrent fever and rigors for a number of years. Had been a diabetic for ten years. A history of gaseous distention and indigestion over a period of years associated with epigastric and anginal pain, also hypertension. Has run a temperature of 99 to 101½ for the past month. Agglutination positive 1:320, opsonocytophagic showed marked phagocytosis, skin test positive, blood sugar 235. Gastric analysis showed no free hydrochloric acid, N. P. N. was 34, urea nitrogen 18, R. B. C. 4,700,000, hgb. 81, leuc. 4,300, polys. 58, lymphs. 42. Malaria negative, urine showed a 4 plus sugar, E. K. G. showed left axis deviation, X-ray of the gall bladder showed large atonic gall bladder with no stones visible. Teleo. showed enlargement of the left ventricle. Lungs negative, X-ray of sinuses showed chronic sinusitis, right lobe of liver enlarged downward about three fingers. Blood pressure ranged from 150 to 170/90.

Treatment consisted of diet, insulin, sulfanilamide, dilute hydrochloric acid. Discharged from hospital on November 29 very much improved.

Case No. 8

C. R. G., fifty, white, male, county court clerk. Seen in Methodist Hospital March

12, 1937. In Washington, D. C., on March 5, had abdominal discomfort, followed by pain in the right lower quadrant, nausea, and vomiting. On admission the chief complaint was: cough, fever, no particular pain, weakness, loss of energy. Examination revealed tall, ptotic type, muddy color, throat red, heart regular, lungs showed a few mucous rales, abdomen showed a mass in the right lower quadrant with tenderness and rigidity. Had previously been told he had coronary sclerosis. E. K. G. showed a high take-off of the T wave. Was seen by Dr. J. A. Crisler, Jr. Appendiceal abscess drained. Readmitted June 1, at which time adherent appendix was removed. Discharged June 13, 1937, improved. Readmitted June 26, 1938. Chief complaint: subternal and precordial pain which was referred to the left shoulder and down the left arm. Blood pressure 180/120, aching, hurting over the body, a history of having a low-grade fever for some time with disturbing dreams. Agglutination negative for *Brucella* infection, opsonocytophagic showed slight to negative phagocytosis, skin test positive for *Brucella*. Had been using raw dairy products. Temperature ranged from normal to 100.35, N. P. N. 46, urea nitrogen 20, W. B. C. 5,350,000, polys. 61, lymphs. 39, malaria negative, urine negative. Cholecystogram revealed a chronic cholecystitis. G. I. series negative, E. K. G. showed some evidence of coronary sclerosis. With rest, concentrated glucose, duodenal drainages, diet, vasodilators, etc., was improved and discharged July 10, 1938. Was advised to take undulant fever vaccine, which he never took on account of fear.

He was again admitted December 18, 1938, for recurrent precordial pain radiating down both arms, increased on the slightest exertion, very nervous and excitable. E. K. G. still showed evidence of sclerosis, but not sufficient to make a diagnosis of occlusion. Received some therapy as previously given with injections of novocain in the para vertebral area for the relief of pain which had not been relieved by nitroglycerin. He was advised to take sulfanilamide and was discharged over the holidays.

He returned January 12, 1939, and was

given sixty grains of neoprontosil daily for five days with no toxic effect from the same. Temperature ranged between 98.6 to 99. He was again sent home on diet, rest, etc. He returned to the clinic recently, reporting he was very much improved, temperature normal, and freer of pain than he had been in months.

Case No. 9

R. C. K., twenty-seven, female, housewife. Seen in the Methodist Hospital through the courtesy of Drs. Pride and Crisler. Family history negative. Lives on farm, uses raw dairy products, cows have not been tested. Husband living, good health; four children living, good health. Had childhood diseases, other history negative. Has not felt well for eighteen months, which was during her last pregnancy. Had smallpox June 11, 1938, two weeks prior to delivery. Baby presented no rash at birth, but had a few lesions three or four days after birth that resembled smallpox. A few days following labor had fever from 99 to 103 for eleven weeks with sweats and headaches, no rigors. Was then free of fever until five or six weeks before admission, when there was a rise of temperature again, 102 to 103. States she had fever until she came to hospital. Physical examination revealed well-nourished, well-developed female, obese type, did not appear acutely ill, tonsils showed 3 plus enlargement, some redness and ragged. A palpable mass in the lower abdomen about the size of four to five months' pregnancy. Spleen slightly palpable on deep inspiration. Blood pressure 140/90. Dr. Pride was of the opinion that she is about five months' pregnant. During her stay in the hospital temperature was normal except following skin test when it reached 99.25. N. P. N. 33, urea nitrogen 10, urine negative, R. B. C. 4,070,000, hgb. 58 or 10 grams, leuc. 6,650, polys. 79, large monos. 3, eos. 1. Malaria negative, X-ray of the chest negative, agglutination for tularemia negative, agglutination for *Brucella* negative. Opsonocytophagic 44 polys. in 100 showed 15 to 30 bacteria per cell, slight to moderate phagocytosis, skin test definitely positive.

With the history, place of residence, milk

supply, and all being considered, one would conclude that this is a latent case of undulant fever with pregnancy. Further investigation advisable on return of fever.

Case No. 10

H. C. C., thirty-five, male, policeman. Family history negative. Diseases of childhood. Appendectomy 1928. Seen in the clinic on February 4, 1935. Chief complaint: feels bad, fever, sweats for two or three weeks, has a cold and is taking quinine. Blood pressure 118/70, heart regular, rate 90. A few moist rales in the right apex which disappears after coughing. Abdomen showed an old scar. Urine negative, prostate negative, W. B. C. 8,900, polys. 66, lymphs. 34.

On March 15 he returned, still having fever. Agglutination was positive for Brucella 1:160, polys. 45, lymphs. 55, malaria negative. Was given undulant fever vaccine, made an uneventful recovery, and returned to work two months after onset.

Case No. 11

W. D. D., fifty-four, male, employed in abattoir. Handled meat and gland products with bare hands, which came directly in contact with blood and other secretions. Seen in the clinic on July 20, 1938. A history of not having been well for a period of six months or more. Onset of definite rigors July 5, 1938. Since then had fever every night followed by rigors and sweats, with a peculiar odor to the sweat, weakness, headache, stiffness of muscles, states that he feels old. He was seen by Dr. Alfred Mason prior to coming to the clinic, who had ruled out the G. U. tract as a cause of fever. On examination we found a poorly nourished, sallow male with the appearance of an ill person. Temperature 100, blood pressure 115/80, heart negative. Abdomen revealed some tenderness in the right hypochondrium.

He was admitted to the Methodist Hospital on July 20, 1938. Agglutination was positive 1:320, blood culture negative, opsonocytophagic showed marked phagocytosis, skin test was positive, Kahn negative, W. B. C. 4,700, polys. 64, lymphs. 36, urine

negative, malaria negative, R. B. C. 4,020,000, hgb. 75 or 13 grams. K. U. B. showed some hypertrophic-osteoarthritis of the lumbar spine, temperature ranged between 99 and 103. Was given prontosil, grains 80, daily for three days, which was discontinued on account of evidence of methemoglobinemia. (Some blueness, nausea, and vomiting.) Treatment: methylene blue, glucose intravenously, and vitamin B intramuscularly. On August 5 he was given prontosil again, 60 grains for two days, which was followed by a return of toxemia with normal temperature. He was discharged with information that he would probably have a return of fever. His temperature remained normal until August 25, at which time it was 100 to 101. He was again admitted to the hospital. Leuc. 6,850, polys. 55, lymphs. 45, malaria negative, urine negative. He was given prontosil, grains 80, for two days followed by grains 60 daily for two days and grains 40 for two days. Temperature returned to normal. On September 1 he was discharged improved. During his stay in the hospital this time he received glucose and vitamin B. He was in the clinic recently, has gained twenty pounds, returned to work sixty days after onset of disease, and has had no return of symptoms since he returned to work.

Case No. 12

R. H., seven, male, schoolboy, lives on farm. Admitted to Methodist Hospital, May 29, 1934. A history of fever and sweats from three to six months' duration. Tonsillectomy was done six weeks previous to admission. Fever continued. Bang's disease exists in the dairy herd. We found a well-developed, well-nourished male child, color sallow, spleen slightly palpable, temperature range 99 to 101. Heart rate 100 to 110, increased after exercise. A systolic murmur was heard at the mitral area. Urine negative, blood culture negative, agglutination for Brucella positive 1:80, R. B. C. 4,410,000, hgb. 75, W. B. C. 6,000, polys 46, lymphs 47, L. lymphs 7. Widal negative for typhoid, malaria smear negative. X-ray of the chest and sinuses negative, stools negative. He received two series of vaccine,

improved, but occasionally has return of fever.

Information received March 28, 1939, to the effect that the patient is much improved, has gained weight, and has had no return of fever. This in my opinion was a case of rheumatic fever with brucellosis.

Case No. 13

F. M., forty, female, teacher. Tonsils removed 1923, at age of twenty years had both ovaries removed and partial hysterectomy performed. Chief complaint: generalized aching and pain, nausea, gaseous distention after meals, constipation, loss of weight, and recurrent bilious attacks. Has had several diagnoses in the past. On examination we found poorly nourished, pale, tall ptotic type female who has a health complex. Skin dry, papillae of the tongue, slick and atrophied, hair dry. Thyroid negative, heart negative, lungs negative. Tenderness in the right hypochondrium and reflexes overactive. Blood pressure 110/70, pulse 65. Stool examination negative, gastric analysis showed achlorhydria. Opsonocytaphagic negative to slight phagocytosis. Cholecystogram revealed a catarrhal cholecystitis and G. I. series showed spastic colon. Heart and lungs essentially negative. Urine negative, R. B. C. 4,700,000, hgb. 74, leuc. 5,166, polys. 60, lymphs. 40, metabolic plus ten per cent.

She was placed on a gall-bladder diet, hydrochloric acid, iron, and vitamin B. Advised in the face of other findings to take treatment for undulant fever, which she stated she could not do at this time owing to the fact that she would have to give up her teaching position. We have not heard from her since.

Case No. 14

R. O. M., twenty, female, housewife. Seen in the clinic on October 10, 1938, referred by Drs. Crisler and Hennessey. Chief complaint: pain in the right lower quadrant, recurrent since September, 1938, increased on walking, not associated with menstruation; fever daily with maximum of 100. Appendix removed in 1935. Advised early in the year of 1938 that she had tuberculosis of the right kidney. This was checked,

and no evidence of tuberculosis was found. Skin tests for tuberculosis were negative. As a schoolgirl was advised by the school physician that she had a heart murmur. No history of rheumatic fever, physically strong, romped and played as a child, was a professional dancer later, not short of breath at that time.

On examination we found a well-nourished, well-developed female, flushed facies and neck. Blood pressure 110/70, heart first sound is booming in quality, a systolic blow at the mitral followed by double sound. P. M. I. is forcible with a systolic thrill in the left lateral posture, and on exertion sounds increased with a gallop rhythm, rate 100 at rest, 120 after exercise, temperature 100. Tonsils 3 plus, enlargement and ragged. Pelvic examination negative, agglutination negative, opsonocytaphagic slight phagocytosis, skin test positive for *Brucella*. Leuc. 8,766, polys. 62, B. M. R. minus five per cent, sedimentation rate normal, urine negative. Fluoroscopic of chest showed: moderate hilum thickening, no peripheral infiltration, a few calcified glands in the right hilus, fullness of the pulmonary conus, no cardiac enlargement.

Treatment consisted of vaccine, two-tenths of a cubic centimeter intramuscularly followed by temperature of 100. Later thirty-five-hundredths of a cubic centimeter with a temperature of 104 and 105. This persisted accompanied by rigors, nausea, vomiting, and she was admitted to the hospital on November 7, temperature 104. Glucose intravenously. Blood culture negative. On November 8 developed jaundice with some tenderness over the gall-bladder region. Icterus index 15. Menstruated while in the hospital. Left hospital November 14. Later received sulfanilamide, sixty grains daily for four days, followed by rest period, temperature subsided. Was in the clinic on January 9, at which time she stated her last menstruation ended November 12, nausea and vomiting in the mornings, breasts sore and tender, uterine enlargement, Asheim Zondek positive, referred to obstetrician.

Last report: progress satisfactory.

Case No. 15

W. S. J., thirty-one, female, housewife. referred by Dr. Pride. Seen in the Methodist Hospital, February 18, 1937. Family history: one sister died with tuberculosis with which she was a contact. Began menstruating at fourteen, had diseases of childhood. Scarlet fever at ten, diphtheria at eleven, and typhoid at seventeen, following which she was told she had a leaky valve. In 1933, she had an amputation of the cervix, removal of a cystic ovary, and an appendectomy. Husband living, in good health, two children in good health. She menstruated in December, 1936, and was twelve days late in menstruation in January, 1937, which was followed by cramps, pain, and flow, rise in temperature—100 to 103. On February 6, 1937, she had a dilatation and curettage, pathological diagnosis being decidual reaction. This was followed by a return of fever of 100 or more, sweats, foul discharge which persisted.

On examination we found a poorly-nourished, anemic, pale female. Blood pressure 100/70, temperature 99, heart regular, rate 80 to 90, a soft systolic murmur at the mitral area, lungs negative, abdomen showed tenderness in the right and left iliac regions. E. K. G. negative, teleoroentgenogram negative, urine negative, blood culture negative, P. P. D. for tuberculosis negative, R. B. C. 4,250,000, hgb. 81 or 14 grams, W. B. C. 9,500, polys 79, lymphs. 21, malaria negative. Had attack of tachycardia and fainted.

Following this, she had some fever, but showed marked improvement with the use of liver extract. Later she developed uterine hemorrhage and a mass was found in the left pelvis. She was admitted to the Methodist Hospital on March 9, 1937. Temperature 99 to 100, sedimentation rate normal, R. B. C. 4,600,000, hgb. 15.6, W. B. C. 11,600, polys. 78, lymphs. 22, urine negative. A left salpingo-oophorectomy was done.

She was discharged on March 25 improved. Temperature 98.6. A few days later there was another rise in temperature. On April 12 temperature was 99 to 101, agglutination was positive for *Brucella*,

opsonocytophagic showed slight to moderate phagocytosis, skin test showed a marked reaction and was followed by a temperature of 103 with enlargement and tenderness in the axilla of the left side, rigors, fever, and sweats. Following this she was given one-eighth of a cubic centimeter of undulant fever vaccine intramuscularly. This was followed by reaction and fever. Following this she was given one-half of a cubic centimeter, gradually increased, and discontinued because the reaction was severe. She was allowed to rest and a second series of vaccine was given, using one-tenth of a cubic centimeter and increased gradually to one-fourth of a cubic centimeter. This was also followed by marked reaction and no further vaccine was given. She was later advised to take sulfanilamide, but owing to the fact that she was improved she decided to wait before taking the same. The latest report is much improved.

Case No. 16

W. A. C., thirty-five, female, housewife. Seen in the clinic on December 13, 1938. Chief complaint: chilly sensation, fever, weakness, aching, backache. States that she was treated for giardiasis in 1932, at which time she was placed on a raw milk diet for a period of time. She was aware that Bang's disease was prevalent in her county, and after having the above symptoms with return of fever for three or four summers she became interested in the possibility of having undulant fever. Skin test made by her home physician was positive.

On examination we found a well-developed, well-nourished female, blood pressure 125/80, nervous, excitable type. Slight tenderness in the right hypochondrium, color muddy, left forearm showed an area of pigmentation from recent skin test. Heart negative, lungs negative, appendix removed, temperature 99 1/5.

She was admitted to Methodist Hospital. Agglutination positive for *Brucella* 1:160, opsonocytophagic positive. R. B. C. 3,450,000, hgb. 62, leuc. 4,250, polys. 51, malaria negative, urine negative. Vaccine was started in the hospital and completed at home by her physician. Recently she has

had some return of fever and aching and her physician was advised to give her neoprontosil tablets, as a vaccine reacted very severely with her.

Case No. 17

J. O. H., male. Seen May 27, 1936. Referred by Dr. Ed Thompson. Chief complaint: fever, weakness, rigors and sweats. Onset about May 1. Agglutination was positive 1:320. Other blood work made by Dr. Thompson and is not available.

On examination we found a well-nourished, well-developed male about thirty years of age. Temperature ranged from 100 to 104½. Physical examination negative except muddy discoloration of skin. Some slight tenderness over the gall-bladder region. Used raw dairy products. Received two series of undulant fever vaccine, after which temperature came to normal. Convalescence was slow.

Recent report is that he has had no return of fever since infection.

Case No. 18

T. C. P., thirty-seven, female, housewife. Seen in the clinic on May 6, 1936. Previous history: tonsils removed, appendectomy, right cystic ovary removed, and a gall-bladder drainage in 1928, was treated for malaria three years ago, had rheumatic fever at age of nineteen, was found to have positive undulant fever agglutination in 1935, received two series of Parke-Davis vaccine. Chief complaint: fever, recurrent for last three years, epigastric pain, soreness in the upper abdomen, aching, nervous and on edge, rigors and sweats at times, gaseous distention after meals with occasional nausea and vomiting.

On examination we found a poorly-nourished female, blood pressure 130/80, temperature 99, weight 98, color muddy, teeth negative, heart regular, rate 85; a loud systolic murmur at the apex transmitted to the axilla with the first heart sound booming, lungs negative, abdomen shows scars of previous operations, tenderness over the gall-bladder region, urine negative. Leuc. 6,800, polys. 69, lymphs. 31, malaria negative. K. U. B. negative, cholecystogram showed peri cholecystitis, G. I. series nega-

tive, teleoroentgenogram shows fullness in the pulmonary cone, heart of normal size, B. M. R. minus two per cent, agglutination 1:80, opsonocytophagic less than twenty bacteria (positive).

Admitted to the Methodist Hospital. Vaccine was refused and she received miron intravenously instead—fourteen doses. She left the hospital improved and returned to the clinic on June 4, 1936, stating that she was much improved, but that she still had temperature of 99 and 99 3/5 in the afternoon. Digestion improved, opsonocytophagic index was forty. At this time we persuaded her to take vaccine, which she received at home. Other treatment consisted of gall-bladder diet, rest, fresh air, and sunshine.

Latest report we have is that she is still much improved.

Case No. 19

J. B., twenty-five, female, housewife. Seen in the clinic August 21, 1936. Chief complaint: fever, seven to eight weeks. Appetite good. Recent delivery of baby, two months old. Physical examination was negative. Leuc. 10,400, polys. 78, lymphs. 22, agglutination positive for Brucella 1:250, opsonocytophagic positive. Skin test made at the clinic (results not reported).

Treatment: undulant fever vaccine, two series. Last report: definitely improved.

Case No. 20

H. G. J., forty-five, female, housewife. Seen July 14, 1937. Family history negative, diseases of childhood, scarlet fever at age of nine, flu in 1919, at which time heart rate was increased, sinus operation in 1929, pyelitis recurrent for ten years, menstruation began at seventeen years of age, regular until recently. For last three summers had fever and sweats. In the summer of 1936 ran temperature of 100 to 102, aching, sweats, no rigors. Uses raw dairy products, herd infected. A sense of flushing of the face in afternoons, feels better in cool weather than warm. Present illness began about the middle of April, 1937. Stuffiness of nose and purulent discharge, productive

cough, has run low-grade fever with sweats at night and aching.

On examination we found poorly-nourished, tall, ptotic type female, slight redness of pharynx, heart regular, lungs showed diffuse crackling rales, abdomen negative, extremities negative, blood pressure 110/70, stereo of chest negative, agglutination negative for *Brucella*, opsonocytophagic slight to negative phagocytosis, skin test positive, sputum negative for tuberculosis, B. M. R. minus five per cent, R. B. C. 4,460,000, hgb. 88 or 15.2 grams, leuc. 5,200, polys. 81, lymphs. 11, 2 1. monos, urine negative.

She was given undulant fever vaccine while in the hospital, which was continued at home. She has had no return of fever since. General health improved.

DISCUSSION

DR. W. A. DeMONBREUN (Nashville): My remarks in the discussion of this paper are made from the standpoint of a general pathologist. During the period of July 1, 1934, to April 30, 1937, the United States Bureau of Animal Industry made agglutination tests on 18,998 herds which totaled 333,374 cattle, and 9,708 herds, or fifty-one per cent of the herds, were found infected with *abortus*. The total number of infected cattle was 27,735, or 8.3 per cent of the whole.

During the year 1938 only twenty-four cases of human *Brucella* were reported in the State of Tennessee. We believe there were many more active cases, and the doctors of this state should employ the laboratory procedures, especially the agglutination test and the skin tests as described by the essayist, which are of the greatest importance in the diagnosis of this disease. Emphasis has been correctly placed upon the elimination before making the diagnosis of brucellosis of those diseases whose symptomatology simulate those of brucellosis.

As to the skin tests, the Vanderbilt University group, headed by Dr. A. E. Keller, has recently retested, after an interval of two years, seventy-two positive reactors who are inmates of the Home for the Feeble-Minded at Nashville. The antigen dosages employed were one-fifth the amount of brucellergin and one-fourth the amount of Jensen-Salsbery vaccine employed by the essayist. All but two of the seventy-two individuals again gave positive reactions and in no case was there a severe local or generalized reaction.

Goldfain of Oklahoma City, in making the skin tests, uses one-tenth cubic centimeter of the vaccine and frequently gets severe reactions. One speculates as to whether or not some such reac-

tions, where a relatively high dosage of antigen is used, may not be falsely positive and may, in a measure, account for the relatively high incidence of cases reported from Oklahoma.

In 1937, Oklahoma reported one-sixth of the 2,497 cases reported for the United States as a whole. It would seem, therefore, that in making the skin tests it would be better to employ the smaller amount of antigen as employed by Keller and his associates. This would tend to obviate the uncomfortable reactions and reduce the falsely positive reactions to a minimum.

Most of the cases of brucellosis that have come to autopsy have shown enlarged spleens and superficial lymph nodes. Histologically there is usually hyperplasia of the reticulo-endothelial system, but constant and characteristic lesions have not been described. Some authors have described nodular lesions in the spleen, liver, and lungs which resemble tuberculosis or certain fungous infections. There are reported in the French literature two or three cases of brucellosis which simulated Hodgkin's disease.

The essayist has called to your attention the four cases diagnosed as Hodgkin's disease by Parsons and Poston of Duke University. *Brucella* was obtained in culture from all four cases which had negative agglutination titres, negative skin tests, and low opsonic indices. On this basis these authors, conservative in their interpretation, formed the hypothesis that the Hodgkin's-like lesion may occur in patients suffering with chronic brucellosis when they are in an anergic state. These authors are continuing their studies to determine if brucellosis and Hodgkin's disease are etiologically, as well as anatomically, identical. If such proves to be the case, it may be possible to treat with success the fatal form of the disease by building up the agglutinin titre of the patient's serum.

I learned yesterday that the people of Duke are continuing this work, and something like fifteen additional cases that histologically are like Hodgkin's disease have yielded the *abortus* from the tissue. This is a very interesting phase of this subject to me.

T. C. MOSS, M.D. (Memphis): I wish to congratulate Dr. Blue on his excellent presentation of this timely subject, and I believe that through practical experience he has arrived at a very accurate appraisal of the present-day status of undulant fever.

In performing the majority of the laboratory tests mentioned in this paper we have been gratified by some of the results obtained and disappointed in others. For a time we were in hopes that it would be possible by use of various laboratory tests to state accurately that a patient was suffering from an active case of undulant fever. We believe this is possible in the initial infection, but after a patient has had undulant fever for several months

it becomes very difficult to determine whether or not a subsequent illness is due to undulant fever or some similar disease. Marked phagocytosis of *Brucella* will be shown in the opsonocytophagic test after the patient has been ill for a month or less and will continue to give a so-called "immune reaction" though the patient may be suffering from an acute exacerbation of undulant fever. The diagnosis of undulant fever in an acute exacerbation of a chronic infection is probably best made by the history of the case, the presence of a normal or low leucocyte count with a relative lymphocytosis, a probable rise in the agglutination titre to *Brucella* organisms, possibly by blood culture, and finally by exclusion of other diseases.

We have found the allergic skin test of value in undulant fever in conjunction with the agglutination test. Generally speaking, the allergic skin test will be positive in those individuals who have undulant fever, and in those individuals who in the past have had undulant fever. About six per cent of active cases of undulant fever show a negative undulant fever agglutination, and in chronic brucellosis the agglutination test is often found to be negative or of nondiagnostic titre. The skin test will enable the physician to discover these obscure cases. We prefer the use of vaccine in the skin test because the test is easier to read, doubtful reactions are eliminated, and because brucellin sometimes loses its potency. At times lymphangitis, fever, and axillary adenitis follow positive skin tests on the forearm, but no severe reaction has been observed, and the patient himself is favorably impressed.

The culturing of *Brucella* is usually performed under ten per cent carbon dioxide tension because the abortus strains grow best under partial carbon dioxide tension, and the bovine organism causes the overwhelming majority of cases of the disease in this country. The melitensis variety, however, may be inhibited by this gas. Only occasionally may one expect to find a positive blood culture in undulant fever produced by the bovine strain, whereas the melitensis and porcine strains are more frequently found in the blood.

The agglutination test is still the most widely used and practical test for undulant fever. It has the advantage of high degree of accuracy in diagnosis (ninety-four per cent), ease and simplicity in performance, a lability of titre often corresponding to the acuteness of the infection, and a high degree of specificity. Cross agglutination with bacterium tularensis sometimes occurs, but variation in agglutination titre, together with dissimilarity of clinical manifestations, should prevent any confusion of the two diseases.

DR. O. N. BRYAN (Nashville): Mr. Chairman and Members of the Tennessee State Medical Association: It is with a great deal of interest that I have listened to this excellent paper by Dr. Blue this morning. It is a subject that should have been

brought to us more often than it has been in the past.

It was in 1922, I believe, that the first case of this was reported in the United States, and in 1934, just twelve years later, there were something better than 4,000 cases, so you can see how rapidly diagnostic methods have spread in the recognition of this disease.

The methods of this infection are, as Dr. Blue brought out in his paper, particularly by milk and by meat handlers and technicians. He also brought out the point that the bovine was least malignant of any of these; however, the caprine and porcine were more malignant. However, our incidence from those is less than it is from the bovine.

One of the most important things brought out in his paper was that we have practically no legislation against people selling this type of milk on the market. Some of these herds may be tested for it, but as I understand, there is particularly nothing compulsory about it, and their excuse is that practically all of the herds are infected with it. This disease is, as he brought out, acute, chronic, or latent. When it comes into our hands, of course, very often we will miss it in the acute stage. However, we find a lot of it in the chronic or latent. Why? Because we did not exhaust all of our methods in the acute stage, and it is when it gets to the chronic or latent stage that it is diagnosed. But if we will request that agglutinations be done in all suspicious cases, then of course we will be able to recognize this in an earlier state and probably do a lot of good for these individuals.

He brought out another very important point, the fact that there were a lot of these chronic conditions, like gall bladder and arthritis, that on final analysis were found to have brucellosis as the underlying cause.

As to the diagnosis of this, it is fairly easy as a general rule from the clinical history. Certainly the clinician will have to be suspicious of this first before he would ever even recommend any agglutination being made. But Dr. Blue has gone even further than the agglutination with us, which is wise, because there are some of these cases in which we are not able to get the agglutination, but still by doing the skin test we will be able to make a positive diagnosis of brucellosis.

The symptoms of this condition are very vague. As I said a few minutes ago, it is a most incapacitating disease. The prominent symptoms are fever, general malaise, joint pains, and general bad feeling of the individual. So, personally, I appreciate very much this paper that Dr. Blue has brought before us.

DR. W. R. BLUE (closing): Mr. Chairman and Gentlemen: I wish to thank you for this discussion.

Regarding the amount of antigen used in skin testing, I would say that Dr. Fred Angle of Kansas City, Kansas, who happens to be a personal friend

of mine, has done extensive cross testing with different antigens and has proven that his antigen is as dependable as the others. Dr. Angle has studied brucellosis for fifteen years and reported 100 cases of this disease at the American Medical Association convention in 1934. His vaccine was originated through the University of Kansas Medical School and by the collaboration of the Jensen-Salsbery Laboratory. His vaccine is accepted by the American Medical Association. Some would offer the suggestion that this is a veterinary school that produces this vaccine, but this is in favor of the same rather than against it.

Before this vaccine was developed some 600 strains of *Brucella* organism was studied. Dr. Angle recommended the use of .04 of a cubic centimeter of the vaccine intradermally as a skin test.

With brucellergin or brucellin we use .05 to .1 of a cubic centimeter.

Only yesterday I noticed a marked reaction in a woman forty years of age who was not running fever and who was not in an acute stage. She has a chronic infection, a definite skin test, and little or no phagocytosis.

Dr. Alice Evans, who, by the way, is the first investigator in this country to prove that *micrococcus melitensis* in the cow and the *Brucella abortus* in man were one and the same organism, and who, in her work, developed undulant fever and was incapacitated for seven years and is now working on a process of blood culture procedure that will be most valuable in the diagnosis of undulant fever.

I thank you.

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H. H. SHOULDERS, M.D., Editor and Secretary

JANUARY, 1940

THE ISSUE

SHALL PATIENTS AND DOCTORS RETAIN THEIR FREEDOM OF JUDGMENT IN THE MATTER OF MEDICAL CARE, OR SHALL THIS FREEDOM BE SURRENDERED TO SOME GOVERNMENTAL AGENCY?

EDITORIAL

SOME NEWS ITEMS OF INTEREST

Several news items have reached the office in the last few weeks which indicate that many of the planners who have been operating in the field of public health and medical care may not have planned as wisely, nor exercised their plans as well as they thought they could.

One item is to the effect that the State of Connecticut is to scrutinize United States health grants to the state. The object of the study, as stated by a leader in the study, is as follows: "We want to know whether Connecticut needs this money, needs it for the purpose for which it was applied, and how effectively it is being used."

From Detroit comes the news that there exists a controversy in the administration of the funds for crippled children.

It seems now that a considerable complaint has arisen. Among these are the following:

"First, a survey indicates that two per cent of the doctors received forty-two per

cent of the fees spent for medical service to crippled children.

"Second, there are hospital superintendents who must keep their beds filled, some public officials who like to make the 'gesture grande' before the people, some social workers and visiting nurses who in the fullness of their hearts spread the gospel of free medical care. The commission and the doctors have also to contend with a number of overenthusiastic, but well-meaning pressure groups *who love to play Santa Claus to the underprivileged child at state expense.*

"There has been a 1,400 per cent increase in the case load of crippled and afflicted children in Wayne County.

"A preliminary report of investigation by the Wayne County Medical Society of all tax funds expended in the county for all types of sickness care of the indigent, indicates that less than five per cent goes to the physician for professional services."

These items serve to give one some idea of what would happen if the appropriation for these various medical care projects were increased and still kept under some political management.

The tragedy about all this is that disillusionment comes so late.

SOME PREDICTIONS AND RESOLUTIONS

It is customary to make resolutions and predictions at the beginning of a new year.

It may not be out of place to venture out with a few predictions and a resolution or two on this editorial page.

It is predicted that organized medicine will not suffer in 1940 as was the case in 1939. This prediction is based upon a few facts, some of which are as follows:

In the years 1938 and 1939, a large and well-organized "push" was made to discredit organized medicine and to make long strides toward the establishment of a communistic form of medical practice for the people.

It will be remembered that the American Medical Association was indicted by a federal grand jury. The well-organized forces in this country which were leading and directing the "push" had collaborated in col-

lecting data to support their movement. They also carried on extensive propaganda activities calculated to prepare the people and the congress of the United States for the introduction and adoption of their plans for medical care.

Their plans were formulated and publicized. They were finally formulated into a legislative act and presented to the congress. Hearings were held and much publicity attended the hearings.

During all this time other movements have taken form. Some of the activities of the "Reds" and "Pinks" have been exposed. A few of their designs have been made known and some of the plans that had already been made and adopted have had their weaknesses and faults exposed. All these facts, together with some of the events which have taken place in Europe, have sufficed for the moment, at least, to remove the disguise from some of the leaders and collaborators in this movement.

It is becoming apparent to a lot of people that some of the agitators were really operating behind a *welfare front* for the establishment of a radical change.

These are some of the reasons which seem to justify a greater amount of confidence in the stability of the American ideas of medical practice and of government.

The resolution is that organized medicine hold on to our ideals and remain firm, steadfast, and active.

SOME OF THE DIFFICULTIES OF MEDICAL LEADERSHIP

The following address was delivered before a conference of state and national medical leaders held at Memphis in connection with the meeting of the Southern Medical Association in November.

So many requests have come in for copies of the address that it seems worth while to print it.

Ways and Means of Improving Medical Leadership

H. H. SHOULDERS, M.D., Nashville

It will be noted that I am supposed to address myself to the question, "Ways and Means of Improving Medical Leadership."

Our worthy chairman assigned to me this subject. A critical analysis of it, however, reveals the presence of two implications which I am sure he did not intend.

The first implication is that there is something the matter with medical leadership at the present time, and the second implication is that I am in position to offer suggestions for the correction of these defects.

First, then, I wish to disclaim any assumption on my part to the effect that there is anything seriously the matter with medical leadership, and I certainly wish also to disclaim any assumption to the effect that I possess the remedies necessary to accomplish the correction of defects which, in my opinion, do not exist. In my opinion, the high plane to which medicine has attained in America is attributable, in large measure, to the leadership medicine has had in the past. I hasten to say, also, that medical leadership at the present time compares favorably with that of any period in the past.

Excellent leadership, it seems to me, has characterized medical organizations in the United States for a long time. Of course, I do not mean to say that improvement cannot be accomplished. As a matter of fact, I think that medical leadership must improve in the same sense that medicine itself must improve and go forward. I would, therefore, rather speak to the subject—"Some of the Difficulties of Medical Leadership."

Medicine, as a whole, has progressed in many directions. There has been steady progress in scientific discovery. There has been steady progress in the development of individual skills—in the art of adapting the science of medicine to the needs of the individual sick person.

There has been progress in the art of adapting the science of medicine, in collective fashion, to the collective needs of communities. This progress has broadened and multiplied, to an immeasurable degree, the contacts and the possibilities of the art and science of medicine in human affairs, both as regards the well-being of individuals and as regards the well-being of communities. This progress has served, also, to multiply the difficulties and responsibilities of medical leadership.

I am sure that all who occupy official positions in organized medicine are keenly conscious of this very fact. For these reasons, leaders in medicine, at the present time, have responsibilities and difficulties undreamed of by leaders of former days.

It has not been so long ago that organized medicine was concerned with very few problems which appear relatively simple as we look back on them. First to be mentioned is the concern of medical leadership for improvement of medical care by improving the qualification of doctors. Medicine took the position that it is an appropriate function of government to concern itself with the qualification of those who would practice medicine. It was in response to the demand of medical leadership that a mechanism was set up in the form of state boards of medical examiners to create standards and to pass upon the qualification of those who would enter upon the practice. As a result of these efforts, the quality of medical care was improved and, needless to say, the public was the beneficiary. This action, of course, in no way placed the government in the position of giving individual care to the individual citizen. It did no violence to our democratic ideas.

As scientific medicine progressed it became apparent that situations exist in the form of health hazards which neither individual doctors nor individual citizens can cope with—that the application of some of our acquired knowledge to the needs of humanity required the establishment of an executive department of the state government, clothed with the police power of the state, to make and enforce regulations to deal with these public health hazards. The mechanism established for this purpose was a state department of health in each of the various states and in the federal government.

It is obvious that an individual citizen cannot quarantine his neighbor. It is obvious that an individual cannot make a regulation and enforce it with reference to the purity of a public water supply, the purity of the milk supply, etc. It is obvious that an individual cannot correct many of the environmental conditions which directly

or indirectly contribute to the production and spread of disease. Nor can an individual citizen take effective action to prevent the importation and interstate spread of disease. Departments of the state and national governments, clothed with the proper powers, are in position to deal with all these conditions effectively and with great benefit to the public.

On such a basis and for such a purpose, public health departments, both state and national, were created in response to a demand on the part of an informed and socially-minded medical leadership. This action in no way did violence to our democratic ideas.

Selfishness on the part of medical leadership, of course, would have suggested that such steps not be taken on the ground that more disease would mean more work and more pay for doctors.

Public health departments, then, were created for the purpose of dealing with public health problems as distinguished from individual health problems.

A public health problem, of course, is one which requires the use of an executive force to accomplish its correction.

An individual health problem is one which does not require the use of such an executive force to accomplish its correction.

Poverty has been a problem always. The Good Book says: "The poor you will have with you always."

The medical care of poor people has been a problem since medicine began. Medical leadership a long time ago wrote a plank in its platform of medicine touching this question. It was embodied as a fundamental principle in the code of ethical principles. That plank was liberal. It must have been written by a *liberal* medical leadership because it requires great liberality on the part of doctors in giving medical care to indigent people.

It is to the credit of doctors that we have lived up to that platform of liberality. It seems to me that a radical change in the meaning of the word liberal has taken place in recent times. The liberality of medical leadership requires that medical men sacrifice themselves and subordinate their personal interests to the interests of the public.

The modern political liberal, apparently, holds to the view that he is liberal if he advocates that everybody else be liberal enough to make the sacrifice of turning over to a political agency their earnings, and in addition give to that political agency the power to do as it may choose with both the doctor and the poor.

Liberal-minded doctors in cooperation with liberal-minded citizens throughout the country have been dealing with this problem of indigency for many generations and, may I say, with a considerable measure of success. Every charity hospital that dots this land, to which doctors give their services, is an expression of just that liberality of theory and practice on the part of medical leadership.

It is worth while to call to mind, and to remember, that most of the accomplishments in the field of public health, of which we boast the loudest, were accomplished in that period when our public health officials confined their activities to the field of public health. Yellow fever disappeared. Typhus fever disappeared almost entirely, but unfortunately under modern conditions it seems to be reappearing rather rapidly. Smallpox disappeared as a threat to life and so on. In addition to all this, mortality rates *from all causes diminished* gradually over the years until our gross mortality rates were comparable to, or better than, those of most of the civilized countries of the world. Thus is reflected the efficiency, the benefits, and the progress in all the phases of medical care and public health.

No problem connected with scientific medicine, public health, or the medical care of the indigent, has failed to receive the attention of medical leaders in liberal fashion, and with marked success, over a period of more than half a century.

The new problems with which medical leadership is confronted, it seems to me, deal with the matter of *technique* all along the line. At least some of these problems have had origin in two sources. The economist and the sociologist arrived on the American scene and in the medical field. In many instances both had the prestige attached to a Ph.D. degree. They were armed,

too, with statistical data and fanciful theories. They were *implemented* by propagandists. They have made the position of medical leadership rather difficult. By their activities they have diminished, and in some instances almost destroyed, the faith of the public in the medical leadership which accomplished so much for the public welfare before the arrival of the expert economist and expert sociologist. They very cleverly took advantage of the fact that we all *enjoy fiction more than we do facts*. Fascinating theories, couched in cleverly-formed phrases, uttered by a well-cultivated voice, make a stronger public appeal, in many instances, than the *calm logical voice of experience*. By agitation there has been created a situation which approaches a stampede. Some of our fine health departments, with fine records of service back of them, have been influenced in some degree to make of themselves the *dispensers of charity rather than the administrators of executive functions*.

These health departments, in many instances, found themselves in such a position that they were almost compelled to perform these functions which they were never created to perform. They objected, but were pressed into taking such steps, at time, in response to a public demand, created by the propaganda of the sociologists and economists. Thus problems of medical leadership have been multiplied and complicated.

Of course, one of the theories which the economist advanced was to the effect, that if a proper distribution of the wealth of our people were accomplished, all people would be in position to pay their bills in their own way. This idea, of course, made a strong appeal, but, when experience teaches that the idea, while fascinating, is not practical, the economist and sociologist starts in another direction. They advance the theory that, if we will all turn over a sufficient amount of money and power to them or to some political agency they would create, they will accomplish the distribution of *services instead of the wealth*. They will take command of all those who render services, and those who need services, and as a result all will be well.

It is obvious that the problems of medical leadership are most complicated at the present time, not so much on account of ourselves or our patients, but because of this continuous agitation.

It is not so difficult for us to determine what a sound policy is, but it is sometimes difficult for us to make a sound policy which will make a public appeal equal to that of the fanciful theorist. Medical leaders, therefore, are in a very difficult position to maintain the position medical leadership should occupy.

Notwithstanding all this, our medical leadership must never forget, and up to now, they have not forgotten, that we live in a democracy. It must not be forgotten that there is such a thing as Americanism, and that under the influence of that idea, as expressed in the Declaration of Independence, the American people have made unparalleled progress.

It must never be forgotten that *freedom* was the major concern of the leaders who brought about the adoption of this idea in government. We must not forget that those leaders were more concerned about the question of freedom than they were about their longevity. It must be remembered also that millions sacrificed, not only their longevity, but their life in order to accomplish the opportunities of free men.

Medical leadership at the present moment, then, must be mindful of the past. We must be mindful of the attributes which have made our country great in all respects—the attributes which have given the people of the United States the fullest measure of welfare in its broadest sense that has been enjoyed by any people anywhere on earth.

Medical leadership must remember the past. It must survey the present and visualize the future.

Medical leadership must see humanity as humanity is—its virtues and its faults, its generosity and its greed, its hopes and its fears, its loves and its hates, its capabilities and the lack of them. It must look through this maze of conflicting attributes and see the way we should go. When this is done it must follow through with a fidelity, a

courage, and a self-sacrifice akin to that displayed by those who established Americanism at its beginning.

DEATHS

DR. ERNEST M. FUQUA

Dr. Ernest M. Fuqua, Pulaski; Vanderbilt University Medical School, 1911; aged fifty-eight; died December 31.

DR. C. H. MORGAN

Dr. C. H. Morgan, Knoxville; University of Tennessee, Medical Department, 1899; aged sixty-four; died November 11.

DR. CARL R. MARTIN

Dr. Carl R. Martin, Fountain City; Chattanooga Medical College, Chattanooga, 1910; aged fifty-nine; died January 8 following a long illness.

RESOLUTIONS

JASPER ANDREW REYNOLDS

Dr. Jasper Andrew Reynolds died at his home on December 7, 1939, of acute lymphatic leukemia.

Dr. Reynolds was a graduate of Indiana University School of Medicine. He served his internship at Mt. Sinai Hospital, Cleveland, Ohio, and won a fellowship for training at the Crile Clinic. He was a member of the First Presbyterian Church, the Masonic Order, the American College of Surgeons, the American Medical Association, the Southern Medical Association, and the Chattanooga and Hamilton County Medical Society.

Dr. Reynolds was a faithful member of this society, a sincere friend and a loyal professional associate whose memory will always be held in affectionate remembrance by all his friends and coworkers in this society. His passing brings the deepest sorrow to all who knew him.

Therefore Be It Resolved, That we have lost in Dr. Reynolds a loyal and a valued friend and associate.

Be It Further Resolved, That we extend to his bereaved wife and child our sincere sympathy.

Be It Further Resolved, That a copy of this resolution be spread upon the minutes, a copy sent to the family of the deceased, and a copy sent to the state society.

FRED B. STAPP

J. A. GENTRY

R. M. COLMORE

CLEO CHASTAIN

L. P. BROOKS

J. B. STEELE, *Chairman*.

Approved, December 14, 1939.

S. H. LONG, *President*.

J. MARSH FRERE, *Secretary*.

NEWS NOTES AND COMMENTS

Dr. C. F. Mooney, Knoxville, announces the removal of his offices to 1725 Magnolia Avenue.

Word comes from Knox County that the reelection of Dr. Jesse C. Hill as secretary of the society is the twenty-second time that the society has bestowed this honor upon Dr. Hill. It is not only an honor, but an obligation that Dr. Hill has met in a most excellent way. Our best wishes are for the prosperity of the society and its faithful secretary.

WOMAN'S AUXILIARY

President.....	Mrs. Matt Murfree
	Murfreesboro
President-elect.....	Mrs. W. T. Braun
	Memphis
Press and Publicity.....	Mrs. R. Z. Linney
	Madison

DAVIDSON COUNTY

Woman's Auxiliary of Nashville Academy of Medicine and Davidson County Medical Society met Friday, December 9, at the home of Mrs. Oscar Nelson on Hampton Road.

A feature of the meeting was the introduction by Mrs. Hamilton Gayden, membership chairman of the following new members: Mrs. W. A. Demonbreun, Mrs. J. C.

Overall, Mrs. G. S. McClellan, Mrs. Max Moulder, Mrs. Jerome Lee, Mrs. T. A. Whitfield, Mrs. Vernon Hutton. Honorary: Mrs. G. C. Savage, Mrs. George Price, and Mrs. W. H. Tanksley. Mrs. Elkin Rippey and Mrs. Fowler Hollabaugh were chairmen for the day.

Mrs. Jay Johns, Jr., led the singing of Christmas carols, for which Mrs. Harvey Reese was accompanist.

Mrs. R. Z. Linney read a Christmas play.

Luncheon was served, followed by a business session presided over by Mrs. J. Travnick, Jr. Plans were completed for Christmas work at the General Hospital. Mrs. Theo Morford, chairman of the welfare group, told of the cooperation of the group with civic clubs in supplying games and playground equipment for the Juvenile Detention Home. Mrs. B. F. Byrd, chairman of Woman's Civic Forum, announced a meeting on December 11 in the assembly room of Hermitage Hotel.

REPORTS FROM THE CONVENTION

There was a whirl of events for wives of the doctors at the Medical Convention at Memphis, November 21-24. Mrs. Willis C. Campbell was general chairman of the ladies' entertainment. There was a luncheon at noon Wednesday, November 22, at Hotel Peabody with Mrs. W. K. West presiding. An elaborate ball Wednesday night at Hotel Peabody was given for the doctors and their wives. Woman's Auxiliary to the Memphis and Shelby County Medical Association entertained with a luncheon and fashion show at 12:30 P.M., Thursday, November 23, at the Nineteenth Century Club. Mrs. Walter Ruch, president, and Mrs. W. T. Braun presided. Thursday night a dinner musical and moving picture was given by the Southern Medical Association at the Hotel Gayoso complimenting the ladies, Mrs. Thomas Nelson Cooper presiding. Vice-chairmen serving with Mrs. Campbell were Mrs. W. L. Williamson, Mrs. Joseph Frances, Mrs. William Calvert Chaney, Mrs. Walter Ruch, Mrs. Walter Sibley Lawrence, Mrs. W. T. Braun, Mrs. Edward Clay Mitchell, Mrs. W. H. Gregg, Mrs. Percy Toombs, and Mrs. W. T. Black.

MEDICAL SOCIETIES

Anderson County:

The Anderson County Medical Society met on December 8. The following officers for 1940 were elected:

Dr. P. M. Dings, Briceville, president; Dr. E. H. Hudson, Norris, vice-president; Dr. J. S. Hall, Clinton, secretary-treasurer; Dr. J. M. Cox, Lake City, delegate; Dr. Thomas Jennings, Clinton, alternate.

Campbell County:

Officers for the Campbell County Medical Society for the year 1940 are as follows:

Dr. M. L. Davis, Morley, president; Dr. Joseph McCoin, LaFollette, vice-president; Dr. R. J. Buckman, LaFollette, secretary-treasurer.

Davidson County:

Dec. 5—"Seven Correctable Conditions Occasionally Labeled Idiopathic Epilepsy," by Dr. T. F. Frist. Discussion opened by Dr. Edward L. Turner.

"Hysterectomy Operations," by Dr. J. T. Diaz and Dr. John Burch. Discussion led by Dr. C. S. McMurray.

December 12—"Pruritis Ani," by Dr. D. W. Smith. Discussed by Dr. Henry M. Carney.

December 19—"Obstetrical Difficulties," by Dr. L. J. Caldwell. Discussed by Dr. W. B. Anderson.

Case Report: "Hypersuprenalism—Operation and Recovery," by Dr. Carl Crutchfield.

January 2—The Annual Academy Banquet was held at the Noel Hotel.

January 9—"Some Clinical Manifestations Resulting from Endameba Histolytical Infections," by Dr. Edward L. Turner. Discussion opened by Dr. Henry E. Meleney.

Case Report: "Successful Suture of Stab Wound of Heart," by Dr. Murray B. Davis.

Officers elected for 1940 are: Dr. Robert R. Brown, president; Dr. C. S. McMurray, vice-president; Dr. Hamilton V. Gayden, secretary-treasurer.

Dyer, Lake, and Crockett Counties:

At the regular monthly meeting held December 6, the following officers were elected: Dr. W. P. Watson, Dyersburg, president; Dr. C. L. Denton, Dyersburg secretary-treasurer; Dr. J. B. Cochran, Dyersburg, vice-president from Dyer County; Dr. W. T. Rainey, Tiptonville, vice-president from Lake County; Dr. W. H. Stallings, Friendship, vice-president from Crockett County. Dr. N. S. Walker, Dyersburg; Dr. Dr. W. H. Stallings, Friendship; and Dr. R. W. Griffin, Tiptonville, Board of Censors. Delegates: Dyer County, Dr. J. D. Brewer, Dyersburg; Lake County, Dr. W. L. Sumners, Ridgely; Crockett County, Dr. W. H. Stallings, Friendship. Alternates: Dyer County, Dr. J. P. Baird, Dyersburg; Lake County, Dr. W. S. Alexander, Ridgely; Crockett County, Dr. E. O. Prather, Jr., Alamo.

On January 3 the following papers were read:

"The Acute Ear," by Dr. P. A. Conyers, Dyersburg.

"Analysis of Mortality in Acute Appendicitis and Complications," by Dr. J. Paul Baird, Dyersburg.

Greene County:

The Greene County Medical Society met on December 5 and elected the following officers: Dr. R. B. Gibson, Greeneville, president; Dr. J. E. Kite, Bullsgap, vice-president; Dr. M. A. Blanton, Mosheim, secretary-treasurer.

Hamilton County:

The following officers for 1940 were elected: Dr. W. E. Bryan, president; Dr. William J. Sheridan, vice-president; Dr. J. Marsh Frere, secretary-treasurer.

Knox County:

December 5—"Present Status of the Thymus Gland," by Dr. W. R. Cross. Discussion led by Dr. R. B. Wood.

December 12—"Fractures of the Neck of the Femur," by Dr. Jarrell Penn. Discussion led by Drs. Bagwell and Robert Patterson.

December 19 — "Therapeutics Resist Syphilis," by Dr. A. H. Lancaster. Discussion led by Drs. Neil and Muse.

The following officers for 1940 were elected: Dr. R. G. Waterhouse, president; Dr. H. L. Pope, vice-president; Dr. Jesse C. Hill, secretary-treasurer.

Loudon County:

Newly elected officers for 1940 are as follows: Dr. Halbert Robinson, Lenoir City, president; Dr. Arthur P. Harrison, Loudon, vice-president; Dr. Fred E. Hufstедler, Lenoir City, secretary-treasurer.

McMinn County:

The McMinn County Medical Society met on December 14. Dr. R. H. Hutchison of Nashville gave a summary of the work by the new McMinn County Health Department.

The following officers were elected for the year 1940: Dr. Cary O. Foree, Athens, president; Dr. John Lillard, Benton, vice-president; Dr. M. Lou Hefley, Etowah, secretary-treasurer.

Polk County:

At a meeting held in December the following officers were elected for 1940: Dr. Thomas J. Hicks, Copperhill, president; Dr. W. Y. Gilliam, Copperhill, vice-president; Dr. F. O. Geisler, Isabella, secretary-treasurer.

Robertson County:

The officers of the Robertson County Medical Society for 1940 are as follows:

Dr. B. B. Sory, Cedar Hill, president; Dr. W. W. Winters, Donelson, vice-president; Dr. W. F. Fyke, Springfield, secretary-treasurer.

Washington County:

The Washington County Medical Society met on December 7. Dr. Ward Friberg gave a paper, illustrated by a movie, on "Human Sterility."

The following officers were elected for 1940: Dr. P. L. Fisher, Jonesboro, president;

Dr. A. J. Willis, Jonesboro, vice-president; Dr. W. D. Hankins, secretary-treasurer.

White County:

Our society is in good condition and we are loyal and have not missed any meetings during 1939. Have two new members for this year in the persons of Drs. C. B. Roberts and Robert H. Elder, both of Sparta.

We are going to keep up our organization even if we are small in number.

Dr. Elder will read a paper in January.

(Signed) A. F. RICHARDS M.D., Secy.

Wilson County:

The following officers for 1940 have been elected: Dr. O. Reed Hill, Lebanon, president; Dr. Charles T. Lowe, Lebanon, vice-president; Dr. R. B. Gaston, Lebanon, secretary-treasurer. Dr. B. S. Rhea, Lebanon, delegate.

OTHER MEDICAL SOCIETIES

ABSTRACTS OF PAPERS PRESENTED AT VANDERBILT MEDICAL SOCIETY, DECEMBER 1, 1939

1. Case Report: "Hydatidiform Mole," by Dr. Orville Wright.

Mrs. D. S., 22, white, complained of vaginal bleeding, nausea, and vomiting. Last period occurred three months before admission, but uterus was size of five months' pregnancy, and increased six centimeters in height in one week. Friedman test was positive with .02 cubic centimeters of urine and with .8 cubic centimeter of spinal fluid. A diagnosis of hydatidiform mole was made. The patient was suffering from a mild form of rheumatic congestive heart failure. An exsanguinating hemorrhage developed suddenly which could be controlled only by hysterectomy. The pathologic diagnosis was hydatidiform mole.

A review was made of cases of hydatidiform mole at Vanderbilt Hospital over the past fifteen years. Five cases were found, an incidence of .11 per cent or one mole in 1,000 cases of pregnancy. Four occurred before the age of twenty-eight, one at forty-two years. Four were in multipara; one a

primipara. Bleeding was the most prominent symptom in all cases. Nausea, vomiting, and toxemic manifestations were present in three cases. Anemia was a constant sign. Tumor mass was complained of in two. A discussion of the hormonal pregnancy test, the pathology of mole, and the significance of the theca lutein cysts was given.

This case was discussed by Drs. E. W. Goodpasture, John C. Burch, and G. E. Kinzel.

2. "Experimental and Clinical Observations on Peripheral Circulatory Failure," by Drs. Ann S. Minot and Katharine Dodd.

Loss of plasma elements through damaged capillaries results in a reduced volume of circulating blood, a loss of plasma protein, and a concentration of cellular elements. In the presence of capillary injury repeated transfusions of serum and the administration of fluid by the subcutaneous route were found the most effective means of restoring and maintaining an adequate volume of circulating blood.

This paper was discussed by Drs. Horton Casparis, Alfred Blalock, Ralph M. Larsen, and Herbert S. Wells.

3. "Studies of the Toxicity of Salts of Zinc, Cadmium, and Beryllium," by Dr. William R. Sutton.

It was concluded as a result of studies of changes produced by some salts of zinc, cadmium, and beryllium that zinc as the carbonate may be tolerated by growing rats in concentrations as high as .50 grams per cent of the ingested ration. Loss of fertility by females, diminished hemoglobin concentration, increased volume of urine excreted by males, and diminished rate of growth and food consumption in the order mentioned were the most outstanding changes noted in rats on the zinc diet. The level at which cadmium is tolerated by growing rats is below .025 grams per cent of the ration and at this level inanition due to diminished food consumption masks changes attributable to cadmium. The outstanding development produced by the ingestion of .25 grams per cent beryllium as

the carbonate is a rachitic condition accompanied by diminished serum phosphate.

This paper was discussed by Drs. B. H. Robbins, Karl E. Mason, John B. Youmans, and Morton F. Mason.

The third annual session of the Atlanta Graduate Medical Assembly will be held in the Biltmore Hotel, Atlanta, Georgia, January 15, 16, 17, 18, 1940.

The Southern Sectional Meeting of the American College of Surgeons will be held in New Orleans on January 17, 18, 19. Headquarters at Roosevelt Hotel. States represented: Louisiana, Mississippi, Alabama, Georgia, Florida, Tennessee, Kentucky, Missouri, Arkansas, Texas, Kansas, and Oklahoma. The chairman on arrangements is Dr. Idys Mims Gage. An unusually attractive program is being arranged.

Dr. James Gray Carr, A.B., M.D., F.A.C.P., of Chicago, secretary and professor of medicine, Northwestern University School of Medicine, was awarded the Mississippi Valley Medical Society's Distinguished Service Award for 1939 at the recent annual meeting of the society held at Burlington, Iowa. Dr. Carr was presented with the gold medal award and a certificate by the president of the society, Dr. M. Pinson Neal, professor of pathology, University of Missouri School of Medicine, at the annual banquet on September 28. The award is given annually to an active member of the society for "unusual and distinguished service to the medical profession."

The sixth annual meeting of the Mississippi Valley Medical Society will be held at the Hotel Fort Armstrong, Rock Island, Illinois, September 25-27, 1940.

COMING MEETINGS

American Board of Ophthalmology. Applications before 1940. Dr. John Green, 6830 Waterman Avenue, St. Louis, Missouri.

American College of Surgeons, sectional meeting, New Orleans, Louisiana, Roosevelt Hotel, January 17-19, 1940. Dr. Mims Gage, New Orleans, secretary.

American Medical Association, New York, June 10-14, 1940. Dr. Olin West, 535 North Dearborn Street, Chicago, Illinois, secretary.

Atlanta Graduate Medical Assembly, Biltmore Hotel, Atlanta, Georgia, January 15-18, 1940. Dr. Wm. A. Smith, 384 Peachtree, N. E., Atlanta, secretary.

Midsouth Postgraduate Medical Assembly, Memphis, February 13-16, 1940. Dr. A. F. Cooper, Goodwyn Institute Building, Memphis, secretary.

Mississippi Valley Medical Society, Hotel Fort Armstrong, Rock Island, Illinois, September 25, 26, 27, 1940. Dr. Harold Swanberg, secretary, Quincy, Illinois.

Southern Medical Association, Louisville, Kentucky, November 12-15, 1940. Mr. C. P. Loran, Empire Building, Birmingham, Alabama, secretary.

Tennessee State Medical Association, Chattanooga, April 9-11, 1940. Dr. H. H. Shoulders, 508 Doctors Building, Nashville, secretary.

The New Orleans Graduate Medical Assembly, February 26-29, 1940, Roosevelt Hotel. For information, address Secretary, 1430 Tulane Avenue, Room 105, New Orleans, Louisiana.

The United States Chapter of the International College of Surgeons, February 11-14, 1940, Venice, Florida. Dr. Charles H. Arnold, Terminal Building, Lincoln, Nebraska, secretary.

West Tennessee Medical and Surgical Association, Jackson, May, 1940. Dr. George R. McSwain, Paris, secretary.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By HUGH BARR, M.D.
Medical Arts Building, Nashville

Anesthetic Explosions. Philip D. Woodbridge, M.D. The Journal of the American Medical Association, December 23, 1939.

The incidence of explosion in anesthesia is so small that it is considered a rare complication compared with others such as pneumonia, overdose, shock, and asphyxia. A questionnaire was sent to 100 physicians specializing in anesthesia. Eighty-seven of the blanks were returned. The replies covered about a million and three-fourths administrations of ether, one-third million of ethylene, and one-fourth million of cyclopropane. The explosion rates were, respectively, 1.73, 2.44, and 3.85 per hundred thousand.

There were other reports of explosions in which the number of administrations were not given. In the two and one-third millions of anesthetics two people were killed. One was killed by an ether and

the other by an ethylene explosion. Ethylene, cyclopropane, and ether, given in a closed system with oxygen or with oxygen and nitrous oxide, seem to be equally dangerous. Open drop ether is less liable to cause an explosion.

DERMATOLOGY

By E. E. BROWN, M.D.
Doctors Building, Nashville

Management of Intractable Urticaria. Eugene F. Traut, M.D. Archives of Dermatology and Syphilology, September, 1939.

The author is of the opinion that allergens producing urticaria usually enter through the intestinal tract. This manifestation of hypersensitivity differs from true atopy in not being mediated by a reagin mechanism. In the absence of reagins, cutaneous tests usually gave negative results.

The author reports four cases treated with a vaccine made of streptococci obtained from the rectal wall. One of these cases had been treated with a stock vaccine of mixed streptococci, with no results. Two of these cases were treated with a vaccine made from one of the other cases. Results were good in all.

The vaccines of green and indifferent streptococci was given in doses starting with 1,000,000 bacteria and doubling every four days. Vaccines of hemolytic streptococci was started with doses of 10,000 bacteria. If a decided local or systemic reaction occurred the dose was reduced half.

He reports a patient at the Mayo Clinic with urticaria of seventeen years' duration being cured with an autogenous vaccine of colonic organisms. He suggests that studies be made of colonic flora of patients with urticaria resisting the usual methods of treatment with a view to making vaccines of suspectedly abnormal intestinal bacteria.

He states that the benefits obtained by others and himself from the treatment of urticaria with vaccines made from flora of the colon do not admit of a unanimously acceptable explanation.

The vaccines may act by decreasing the patient's sensitivity to offending substances elaborated by bacteria in the colon.

OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.
Suite 234 Doctors Building, Nashville

Newer Concepts of Blood Coagulation and the Control of Hemorrhage. Edw. A. Schumann. American Journal of Obstetrics and Gynecology, Vol. 38, p. 1002, December, 1939.

A prime factor in the mechanism of its production and the control of hemorrhage is the element of coagulation time of the blood. It has long been recognized that, especially in hemorrhage of the

capillary or venous type, the generalized oozing from raw surfaces during surgical operations, uterine mucosal bleedings and so on, reduction of the clotting time is of great value and hence investigators have studied many substances with this end in view. The extract from certain plant substances containing as its principal active agent oxalic acid, possibly with the little understood vitamin K, has been put up for the market under the name of koagamin, a sterile solution for intravenous and intramuscular administration. The oxalic acid content is one milligram per cubic centimeter and the usual dose is three cubic centimeters intravenously followed by two cubic centimeters intramuscularly at intervals of from three to four hours. The effect on coagulation time becomes apparent after ten or fifteen minutes and lasts for about eight hours. Koagamin has been extensively employed in the treatment of hemorrhage of various origins, hematemesis, bleeding gastric ulcers, jaundice, hemoptysis, hematuria, epistaxis, hemophilia, melena neonatorum, and other forms of bleeding with gratifying results. In post-partum hemorrhage and in placenta previa its action has been satisfactory, although more difficult to evaluate since bleeding of this type often ceases spontaneously. In a number of cases, we have observed that the bleeding of placenta previa diminished, even ceased, coincidentally with the sharp reduction of coagulation time brought about by koagamin. The action of this material can be well demonstrated if one has two plastic operations to perform during the same clinic. If one patient is given koagamin in the proper dose, fifteen minutes before operation, the other no special treatment, the difference in the bleeding of the operative field will be noteworthy. In the one case the dissection is almost dry, unless a spurting artery is cut, whereas in the other the usual venous ooze will be seen. The question arises as to whether it is safe to use koagamin during the course of an operation, the fear being that subsequent relaxation may follow the wearing off of the effect of the drug. This has not been noted in our series of cases, because whenever koagamin is given during or immediately after the course of an operation its use is continued for from twenty-four to forty-eight hours, after which much danger of hemorrhage has usually ceased.

OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.
Doctors Building, Nashville

Embolism of the Central Retinal Artery and Its Treatment. Karl Schneider. American Journal of Ophthalmology, November, 1939.

A woman suddenly developed a dull feeling in the whole head and then found she could not see with the right eye. In her early youth a heart disease had been diagnosed. She presented the typical changes of embolism of the right central retinal artery with extensive circumpapillary

edema. Following immediate digital massage and retrobulbar injection of atropine, vision rose to 5 15 eccentrically the next day. A large grayish-white embolus was seen in the lower half of the right inferior-nasal branch. Under continued massage, retrobulbar atropine injections, and intramuscular injections of eupaverine, on the third day some blood could be seen as a thin thread flowing past the embolus. The treatment was continued and vision returned to normal in about a month.

PEDIATRICS

By JOHN M. LEE, M.D.
Doctors Building, Nashville

Intramuscular Administration of Antipneumococcal Serum in Infants and Children. Lambert Krahulik, M.D.; Victor Rudomanski, M.D.; and George Cunningham, M.D., New York. The Journal of Pediatrics, November, 1939.

The authors treated from March, 1938, to March, 1939, a group of sixty-four infants and children with lobar pneumonia by intramuscular injection of type specific antipneumococcal serum. Only patients who appeared seriously ill were so treated. The dose of serum varied from 60,000 to 100,000 units for the infants and 80,000 to 200,000 units for the older children, half the serum being injected into the muscles of each buttock. While most cases had some local reaction, none showed thermal reaction. All of the patients treated with serum recovered.

There were eighteen infants in the group. The average duration of the disease before administration of serum was 4.5 days; the duration after treatment averaged 1.5 days; in most of the cases the temperature dropped to normal in twenty-four to forty-eight hours. In the ten-year period preceding this study the infants were treated without serum and the average duration after hospitalization was 5.7 days and the mortality rate was twelve per cent. The serum-treated infants showed a marked reduction in complications.

Of the serum-treated patients forty-six were over two years of age. In this group there were the same differences over the nonserum-treated cases of previous years, but not to the same degree as in those under two years of age. All serum-treated cases recovered as compared to a mortality rate of two and one-half per cent for those previously treated without serum.

ROENTGENOLOGY

By FRANKLIN B. BOGART, M.D.
Medical Arts Building, Chattanooga

Dosage and Method of Roentgen Therapy for Inflammatory Conditions. A. U. Desjardins. Radiology, Vol. 32, No. 6, p. 699, June, 1939.

X-rays have been used in treating both acute and chronic inflammatory lesions for the past

thirty-five years. Within a few years of the discovery of X-rays, their value in treating cutaneous lesions that were of an inflammatory nature became well recognized.

Between 1904 and 1910, the observation was made that small or moderate doses were sufficient and usually superior to large doses in treating these inflammatory lesions. In acute inflammation, a single dose of ten to fifty per cent of an erythema dose was found to be sufficient. While in chronic inflammatory lesions, doses ranging from fifty to eighty per cent of an erythema dose had to be used and repeated at intervals to obtain the best results.

Why is a favorable effect noted on various kinds of inflammatory processes?

Pathologists have long known that in inflamed tissue there is an infiltration of leukocytes which varies according to the kind and number of the organisms causing the infection. When the infection is caused by staphylococci, and it is applied early in the course of the infection, there is pain relief which occurs in two to twenty-four hours. There may be a temporary increase in the pain which lasts for one hour or two. When suppuration has started, the process is hastened, and it may be necessary to provide drainage earlier than would otherwise be necessary. In infections caused by streptococci, the changes that are seen are not so striking.

The explanation for these clinical manifestations is found in the well-known effect of these small doses of X-ray on leukocytes. Lymphocytes are most easily affected. Warthin demonstrated many years ago that the destruction of lymphocytes could be noted in sections one-half hour after the application of X-rays and the effect on polymorphonuclear cells was seen twelve to twenty-four hours after the treatment.

There is another change that plays an important part in the clinical improvement; namely, that adjacent reticular cells assume the role of phagocytes and ingest the destroyed leukocytes and the bacteria. In lymphoid tissue there is a tendency for connective tissue to replace the destroyed lymphocytes, but this occurs much later and in the meantime regeneration of the lymphocytes populates the lymphoid follicles and tends to mark the connective tissue increase.

Not only should the dose of X-ray used be small, but the field that is irradiated should include a considerable margin of adjacent tissue. Most radiologists agree that in the average infection, better results are obtained with X-rays generated at 100 to 150 kilovolts and filtered through four to six millimeters of aluminum or its equivalent. Kelly has found that in treating infections caused by such virulent organisms as *bacillus welchii* better results are obtained when very small doses, 50 r, are used and repeated twice a day. The author suggests the use of a similar technique in virulent streptococci infection because in all virulent infections, the invasion of leukocytes into the affected

area is slow and in such a plan of treatment more leukocytes are necessarily affected.

In chronic infections, small doses must be used and continued over long periods of time at varying intervals. Tuberculosis adenitis is an excellent example. It has long been known that small doses of X-ray repeated at weekly intervals for long periods give the best results. Failures are often due to discontinuing the treatment too soon in these chronic infections.

SURGERY—GENERAL AND ABDOMINAL

By **BATTLE MALONE, II, M.D.**
1400 Monroe Avenue, Memphis

Surgical Aspects of Carcinoma of the Large Bowel. Harvey B. Stone, M.D., and Samuel McLanahan, M.D. *Journal of the American Medical Association*, Vol. 113, December 23, 1939.

A group of 233 cases of carcinoma of the large bowel is the basis for this study. There was an operability rate of 71.2 per cent, being greater in lesions of the right colon and gradually less as successive portions of the colon are considered. There was a slightly higher mortality rate for simple exploratory or palliative procedures than for resections. A short-circuiting operation, colostomy, or, in the case of a low rectal growth, local destruction of the lesion is usually done for palliation. Irradiation is often helpful in inoperable cases.

In regard to preoperative preparation, unless acute obstruction or perforation is present, a definite regimen must be followed. "A daily saline cathartic, a daily cleansing enema, liquid petrolatum and a high carbohydrate, low residue diet" is prescribed. If there is a partial obstruction, surgical drainage of the proximal gut is done. This procedure is also carried out in patients who are poor risks, but is not used routinely in all cases. Gas oxygen and ether or cyclopropane are the anesthetic agents used most often by the authors.

As to the type of operative procedure for lesions in the colon, the authors generally employ an aseptic end-to-end anastomosis following an adequate resection of the growth and its adjacent mesentery. In their experience seventy-one cases thus treated yielded a mortality of 11.2 per cent. Wherever it is possible the use of the one-stage resection with aseptic anastomosis obviates the necessity of repeated operations and long hospitalization.

In the treatment of malignant growths in the rectum, one-stage abdominoperineal resections was used most often, giving a mortality rate of 16.6 per cent. The management of solitary sessile polyps having malignant characteristics consisted of local excision; if grossly and microscopically there was no invasion of the muscularis mucosae, nothing further was done. If invasion was present then resection was performed. Blood transfusion should be given routinely either during or following a resection of the large bowel. Other intravenous

fluids should be given postoperatively to insure adequate urinary output. Proper training in the care of a colostomy should always be given a patient in whom this procedure is necessary.

UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.

By G. A. WILLIAMSON, JR., M.D.

Medical Building, Knoxville

Surgery of So-called Bilateral Renal Tuberculosis. Roy B. Henline, M.D., F.A.C.S. Southern Medical Journal, December, 1939.

A résumé of forty cases diagnosed as bilateral renal tuberculosis is presented in this report. Mistaken diagnoses are frequently made in these cases, due to technical difficulties in cystoscopy and catheterization of the ureter in the face of marked bladder involvement, or to improper interpretation of the findings. Ureteral catheterization was possible in only thirty-five per cent of this group of patients. Finding tubercle bacilli in both urines or the absence of tubercle bacilli in the urine is not conclusive evidence. In many cases there is regurgitation of infected urine from the bladder up the ureter of a noninfected kidney. Also tubercle bacilli may be thrown off at intervals, causing confusion with positive or negative findings in many cases. In a large number of cases a diagnosis must depend upon intravenous urography and the finding of tubercle bacilli.

Repeated search for tubercle bacilli in a normal functioning kidney in the presence of a destructive lesion in its mate is not justified.

The organisms were found in thirty-six of the forty cases. Caution must be used in giving advice to cases with bilateral renal tuberculosis; some cases when first seen may be apparently medical and later surgical.

Of this group twenty-nine kidneys removed at operation and four at autopsy proved to be tubercular. Twenty-one of the twenty-nine patients have lived an average of 5.4 years following removal of the more infected kidney. Seven died after living an average of 5.15 years after operation. Eight of eleven patients have lived an average of 7.56 years with medical treatment alone. However, the medical cases largely presented renal tuberculosis of a fibrotic type.

The urinary tract only was involved in twenty-five of the forty cases with no evidence of active lesions elsewhere.

The method of treatment offering the greatest hope of relief is the removal of a destroyed kidney, provided it has a good functioning mate.

Medical care by a competent internist is indispensable in the postoperative care of bilateral renal tuberculosis, as well as in the treatment of patients with bilateral inoperable tuberculosis.

BOOK REVIEW

Manual for Diabetic Patients. W. D. Sansum, M.D., Chief of Staff of Sansum Clinic; Alfred E. Kochler, Ph.D., M.D., Member of Staff of Sansum Clinic; and Ruth Bowden, Dietitian of the Sansum Clinic of Santa Barbara, California. Published by Macmillan Co., New York. Price, \$3.25.

This book, while intended as a guide to diabetic patients in the management of their diet and in the administration of insulin, is a most complete little volume.

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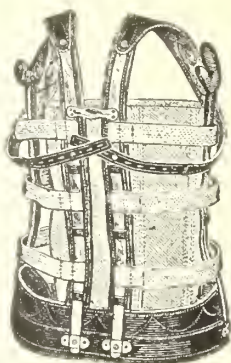
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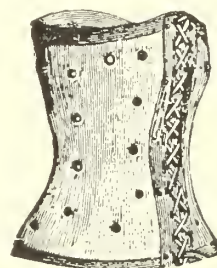
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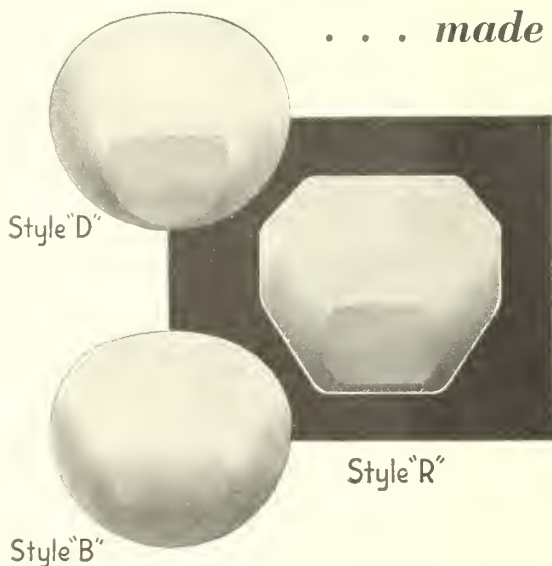
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February, 1940

No. 2

THE EFFECT OF SINUS DISEASE ON THE EYE*

M. M. CULLOM, M.D., Nashville

I N PRESENTING this paper on the effect of sinus disease on the eye, I am aware that I am entering a controversial field. This year I heard a very distinguished specialist on the eye say that he did not believe that a sinus operation ever cured a disease of the eye. When I questioned him closely he said he perhaps did not mean that exactly, but that he did believe that any eye disease relieved by an operation on the sinuses would have gotten well anyway if the operation had never been performed. To my mind, this is a distinction without any great practical difference. However that may be, his opinion must be widespread, since there is a paucity of case reports showing an unmistakable connection between sinus operations and the clearing up of eye disease. I recall cases presented by the distinguished gentleman who is presiding over the eye section of this round-table meeting, which were so dramatic that they left no doubt in my mind that sinus disease was the cause of the pathologic condition in the eye.

I have assembled from my private practice six cases which, I think, are convincing, with one exception. I have had a large number of cases in which a connection could

be assumed with a fair degree of certainty, but which were not beyond the question of a doubt. I give you these case histories and with one exception I present along with them the X-ray studies of their sinuses.

Case 1.—Mrs. O. G. S., white, aged forty-one, consulted me March 20, 1937, for loss of vision in the left eye. Her vision had been growing worse for four years. She had traveled extensively over the United States and had consulted oculists in twenty-three states. There was no useful vision in the left eye. By twisting the head in different positions she could see ten two-hundredths. The vitreous humor was very cloudy. No fundus details could be made out. Transillumination showed the left antrum very cloudy. X-ray by Dr. Shoulders showed the left antrum and left ethmoid very cloudy. At St. Thomas Hospital the left antrum was drained and the left ethmoid was exenterated. The left antrum contained a large amount of pus and the left ethmoid labyrinth was filled with pus and polypi.

When I visited her room the next morning the patient said: "Doctor, I can see with that eye." I thought it was only wishful thinking and asked her how she knew. She covered her right eye and pointed out small objects in the room. A few days later I tested her vision and it was roughly twenty-twentieths. The vitreous was still cloudy, but details of the fundus could be made out.

*Read in Round-Table Session, Section on Ophthalmology and Otolaryngology, Southern Medical Association, Thirty-Second Annual Meeting, Oklahoma City, Oklahoma, November 15-18, 1938.

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Two months later I did a refraction under mydriasis and the vision was twenty-fifteenthths with the details of the fundus sharp and clear. She has greatly improved in health and has regained her weight and color. I have seen her recently and her vision is normal. She is carrying on her work as a teacher.

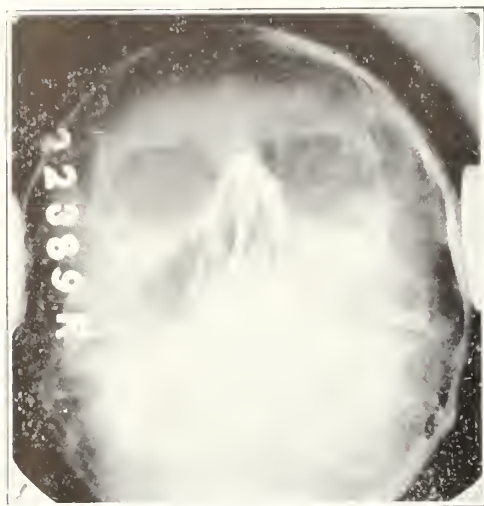


Fig. 1. Case 1

X-ray shows left antrum and left ethmoid very cloudy. Patient had been practically blind in left eye for years.

Case 2.—T. J. S., white, aged seventy-four, was brought to me on February 8, 1938, by his family physician. Dr. Harris assumed that he had cataract and brought him for operation. He was led into my office, being to all intents and purposes blind. He had lost his left eye from a perforating injury in youth. He was unable to detect hand movement, though he had perception of light. The ophthalmoscope showed no sign of cataract. The optic nerve was bluish white and the diagnosis of optic atrophy was tentatively made. There was no way to take his field except by candle projection, which was fairly accurate. There were two things against optic atrophy—the lack of contraction of the field and the fact that the pupillary reaction was normal. Transillumination showed both antra cloudy; X-ray by Dr. H. S. Shoulders showed pansinusitis on the right side and the left antrum was also cloudy. This was supported by his complaint of severe headaches. I discussed his case with him. I

explained that the sinus infection might account for his loss of vision, but that it was by no means certain. I pointed out that he was seventy-four years old, that an operation at his age was hazardous and might not help him, but that on the other hand, I felt that an operation offered him his only hope for improvement of his vision. After considerable discussion and some delay, both antra were drained under a local anesthetic at St. Thomas Hospital. Both antra contained free pus, the one on the right being filled with foul pus. He reacted badly from the operation, stayed a week in the hospital, and I washed large quantities of pus from the right antrum. He returned home and was in bed quite ill for three weeks. He returned to my office in about a month. The change in him was quite noticeable. His color was much improved, he was more alert physically and mentally, and he told me that the pain in the back of his head was entirely gone. A week later we irrigated the antra and when the assistant approached him with the white basin, he reached out and took it from her. The next time he came back he walked into the private office and sat down in the chair unassisted. At his next visit he sat in my private office and pointed out eight large and small pictures on the walls. At final

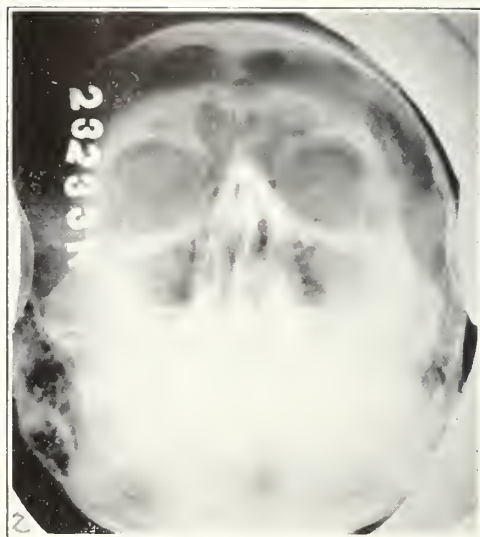


Fig. 2. Case 2

X-ray shows right frontal ethmoid and antrum cloudy, left antrum cloudy. Patient had only light perception in right eye. Left out from old injury.

visit he had twenty one-hundredths vision. He stood at the window and pointed out cars and pedestrians a quarter of a mile away. He told me very proudly that he had seen the moon clearly the night before. His health was greatly improved and his family told me he was working in his garden.

Case 3.—Mrs. V. D. M., white, aged forty-four, consulted me in regard to her eyes on January 11, 1936. She complained of pain behind the eyes and inability to read. Her vision under a mydriatic was 20 15 in each eye with plus sixty-two sphere combined with plus fifty cylinder axis thirty degrees over the right and plus seventy-five sphere combined with plus fifty cylinder axis 150 degrees over the left. I prescribed glasses with the proper addition for her presbyopia and expected her to be relieved of her troubles. In a few months she returned complaining still of pain behind the eye on the left side and inability to read. She said she missed whole words in her reading and had difficulty in keeping on the line. I had told her some years before that she had an infection in both maxillary sinuses and advised an operation, which she declined. I again advised operation, but she did not agree. I was unable to demonstrate any gaps in her field, but she gave the subjective symptoms. Not till November, 1937, did she agree to an operation. An X-ray by Dr. Shoulders showed the right antrum cloudy, the left antrum very cloudy with a growth almost filling it. I did an intranasal operation on the right side and a radical Caldwell-Luc in the left side, removing the polyps and curetting the membrane. In about six weeks she was able to read normally. The pain behind her eyes disappeared following the operation, and she was restored to normal health and vigor from a state of semi-invalidism. I have never seen a more grateful patient.

Case 4.—J. L. L., white, aged fifty-nine, was seen July 22, 1935. Vision had been failing for six months, and was worse in the right eye. He lived in the Southwest and was very fond of deer hunting. The first thing that impressed him was that he couldn't tell a buck from a doe. His sight grew gradually worse until he had to give up reading, and he recognized people with

great difficulty. He lives in a large city in the Southwest, where he consulted two oculists of international reputation. He consulted another oculist of wide reputation

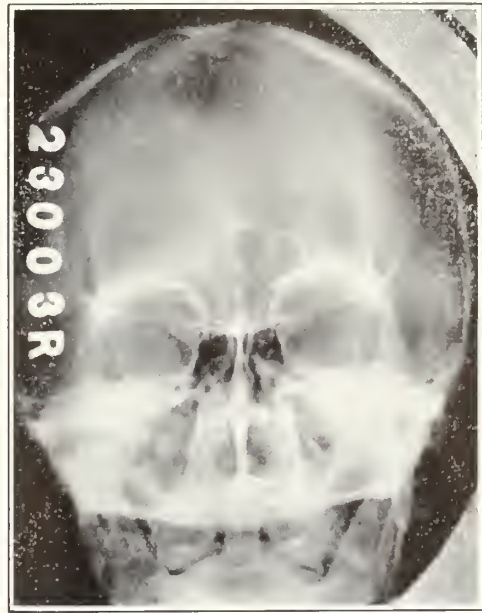


Fig. 3, Case 3

X-ray shows both antra cloudy with polypi in left antrum. Patient had had difficulty in reading for years.

in another city. He was sent through a large medical clinic and all examinations were reported as negative. He came to my office with a written diagnosis of optic atrophy. That he had lost his color sense was shown by the fact that he told his family he was going to town to buy a blue suit. He returned, proudly displaying his blue suit, but the suit was tan. My examination confirmed the findings of other oculists except that I did not agree with the diagnosis of optic atrophy. Since I could make out no fundus changes ophthalmoscopically, I suspected that the blindness was of toxic origin. Transillumination showed the right antrum very dark. An X-ray by Dr. Shoulders showed the right antrum densely cloudy. The patient was very hesitant about submitting to a radical operation on the antrum, but finally consented. Radical operation on the right antrum showed it filled with dark cheesy pus the color of molasses and the consistency of mush. It took a long time to spoon out its contents. It had the appear-

ance of an old chronic process. The patient could recall symptoms in that side of his nose since boyhood. As he went to the Southwest on account of his health, it may be that it was the original cause of his bad health. He had been a victim of rheumatism and chronic backache for a long time.

About a week after the operation, he returned to his home. His vision gradually improved. I saw him a year later and found his vision normal in every respect. He was in robust health, had gone from 145 to 180 pounds in weight, and was leading a very active business life. His rheumatism was completely relieved and the chronic pain in the back had disappeared.



Fig. 4, Case 4

X-ray shows densely cloudy right antrum. Was color blind and unable to read.

Case 5.—F. E. R., white, aged thirty-seven, consulted me May 30, 1938. His right eye was amblyopic. About three months before he noticed that the vision of his good eye was failing. His vision was twenty-seventieths with difficulty. He complained that he felt as if he were looking through a cloud. There was no fundus change. Transillumination showed the left antrum cloudy. An X-ray by Dr. Shoulders showed the right frontal ethmoid and sphenoid clear, the left frontal, left ethmoid and left antrum cloudy. The left antrum was quite cloudy. I advised an operation. I exenterated the left ethmoid and drained the left antrum at St. Thomas Hospital. Following

the operation the vision not only did not improve, but it actually grew worse until he had only twenty one-hundredths vision. I was greatly disappointed. The ethmoid was filled with polyps and the antrum was full of free pus. After about two months the vision began to improve slowly and it is now twenty-fortieths. This case is not



Fig. 5, Case 5

X-ray shows left antrum and ethmoid very cloudy. Right eye amblyopic. Left eye very poor vision.

a brilliant success and I am not certain that the sinus infection played a part in his blindness. However, he is greatly improved in health. He was a washed-out, sick-looking man when he came and has now gained weight and has a healthy color.

Case 6.—I present this case for the reason that it was the first case that ever called my attention to the connection between eye disturbances and the sinuses, and also because it is a different type from the other cases reported.

J. M., white, aged thirty, consulted me in 1904. He complained of excruciating pain in the head and a marked disturbance of vision. There was a muscular imbalance and the vision in each was twenty-seventieths. He was so intoxicated that it was impossible to make an accurate examination. I advised him to go home and sober up and come back. He explained that he was suffering such severe pain in the head

that he had taken whisky, hoping it would relieve him. Several days passed, he did not show up and he passed out of my mind. Four days later I was walking down the hall in the hospital when a door cracked open and a voice asked me to come in. I found my patient and asked him why he was in the hospital. He explained that he was suffering such agony when he left my office that he thought it wise to go to the hospital. He was put to bed and assuming that he was on a spree, Sister Borgia locked up his clothes and held him a prisoner. He said: "Can't you do something for this frightful pain in my head?" The pain was on the right side and it seemed probable that the sphenoid was involved. I packed his nose with cocaine and epinephrine and, taking a large stiff probe, explored for the sphenoid opening. By good luck I forced the probe through the opening. There was a rush of fluid and a startled exclamation from the patient. He said: "What have you done?" I said: "I have made an opening in your sphenoid sinus." He said: "I don't know what you mean by that, but anyway, the pain is gone!" You can appreciate his elation.

I persuaded Sister Borgia to return his clothes and a few days later he came to the office. The vision in his right eye was twenty-twentieths and I then found that the left eye was amblyopic, showing twenty-seventieths vision as before. There was no muscular imbalance. I have seen him many times since.

I report this case because the disturbance of vision was the result of pressure and not toxic as in the other cases.

COMMENT

I have presented for your consideration six cases which fall into three categories.

Four cases resembled toxic amblyopias. They all suffered marked disturbance of vision. The gradual onset and the progressive failure of useful vision indicated ultimate development of permanent blindness.

In one case there was an inflammatory condition of the vitreous which had been present over a long period. In one case there was clear evidence of pressure on the optic nerve from an unresolved empyema of the sphenoid sinus. In that case vision might have been restored by spontaneous rupture. An increasing number of cases is being reported of intracranial complications from unresolved empyema of the sphenoid.

The great improvement in the general health of these patients is very gratifying. They all exhibited marked symptoms of toxemia with pallor, loss of weight, strength, appetite, and vitality. Five patients had rheumatism. They all regained their color, weight, and vigor and were relieved of their rheumatism. They are almost as elated over their restoration to health as over regaining their vision.

While these cases are rare, I believe that they are more numerous than the scarcity of reports would indicate. Every case of failing vision of obscure origin should receive the benefit of a careful examination of the sinuses, including X-ray pictures by a competent roentgenologist.

May I ask you to report your cases?

SUPERIOR PULMONARY SULCUS TUMOR

HENRY B. GOTTEN, M.D., 20 South Dunlap, Memphis

IN 1924, PANCOAST¹ reported three cases of malignant tumors of the pulmonary apex and thoracic inlet. In 1932, he reported three additional cases and suggested the term "superior pulmonary sulcus tumor" for these growths. He described characteristic manifestations associated with these tumors, mainly, Horner's syndrome, atrophy of the muscles of the hand on the affected side, severe pain referred along the distribution of the involved nerves of the brachial plexus, X-ray evidence of a growth in or above the apex of the lung, X-ray evidence of destruction of the adjacent ribs or vertebrae.

Since Pancoast's original contribution, there have been forty-four such cases that we could find reported in the literature. Considerable controversy has ensued concerning these growths. Fried² was the first to question the view of Pancoast that these were superior pulmonary sulcus tumors, his opinion being that most of the cases were of bronchogenic origin or metastatic lesions. He considers two of the cases which Pancoast reported as being metastatic carcinomas. Stein³ reported fifteen cases, seven of them in the *Journal of the American Medical Association*, October 29, 1938. All of his cases apparently were carcinomas of the lung, either primary or metastatic.

The following report is of a carcinoma of the Pancoast type which apparently has arisen from the pleura or tissues above the pleura, giving the usual evidence. This tumor did not have the characteristics of a bronchogenic carcinoma, and there was very little evidence of invasion of the lung.

REPORT OF CASE

G. W. T., aged forty, whose occupation was that of a clerk, was seen by us on April 23, 1938. His chief complaint was pain in his right arm, which radiated to the fourth and fifth fingers. The onset of the pain was five months prior to his admission. This pain had gradually become more severe, and with it there was weakness in his arm

and hand. He had lost ten pounds of weight, and with this loss of weight were weakness and general indisposition. Assuming that his pain was due to neuritis, he had all of his teeth extracted. He had also applied considerable physiotherapy to the affected area with no relief. About three months after the onset of the pain, he noticed that his voice was slightly husky and that he was sweating only on the left side of his face and on the left side of his body. There had been no fever, no blood spitting, and no pain in his chest, but there was a slight tendency to cough without production of sputum.

On physical examination made the day of his first visit, April 23, 1938, we found his weight to be 123 pounds, his normal weight being 135. He appeared weak, anemic, and undernourished. His voice was low and husky in type. He held his arm in a fixed position close to his chest because of pain on movement. The left side of his face was moist, and it was observed that the pupil on the right side was smaller than

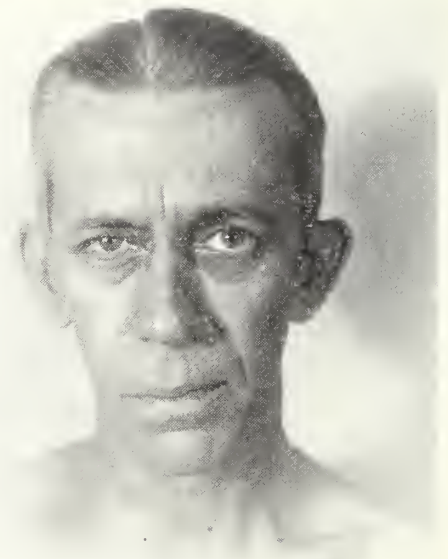


Fig. 1.—Figure shows early prominence of tumor in right axilla and inequality of pupils.

that on the left. (Fig. 1.) There was a slight prominence above the right clavicle, which was rather hard and immovable. A few cervical lymph glands present on both sides were freely movable. Excessive tenderness along the course of the ulnar nerve on the right side caused the patient to carefully guard the arm from contact with any objects, and he made an effort to immobilize it. A noticeable weakness of this limb was elicited, particularly in the fourth and fifth fingers of the hand, and there was some swelling of the hand and enlargement of the superficial veins. (Fig. 2.) Atrophy

ty-nine per cent lymphocytes. The Kahn test was negative.

An X-ray examination was made by Dr. C. H. Heacock, which revealed a tumor in the apex of the right pleural cavity. The tumor apparently extended into the mediastinum and into the supraclavicular space. (Figs. 3 and 4.) There was no evidence of



Fig. 2.—Showing edema of right arm and hand, cyanosis, and venous enlargement. The tumor has distorted the normal contour of the right apex.

of the entire limb was partially due to disuse. In the suprascapular region of the right shoulder there was a tender area about five centimeters in diameter.

Breathing was free and equal on both sides with generalized prominence of the ribs. The blood pressure was 95/70, the pulse rate seventy, and the temperature normal. The urine was negative. The hemoglobin content was eighty-eight per cent; the red blood count 4,250,000. The white blood count was 11,500, with seventy-one per cent polymorphonuclearcytes and twenty-nine per cent lymphocytes.

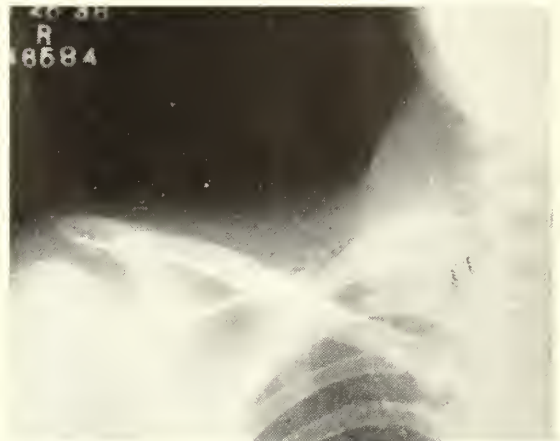


Fig. 3.—Haziness in the right apex produced by infiltration of the tumor.

erosion of the ribs or the vertebrae. The X-ray diagnosis was superior pulmonary sulcus tumor of the Pancoast type.

A series of deep X-ray therapy treatments was begun and continued over a period of forty days. During this time the patient experienced a good deal more pain



Fig. 4.—X-ray demonstration of the tumor by projection from the left axilla to the right apex.

and discomfort, with no evidence of improvement. It was necessary to administer opiates for the relief of the pain in his arm. The patient became progressively worse, suffering from excruciating pain, general indisposition, nausea, and vomiting. At times there developed a good deal of swelling of his right hand and arm so that he was unable to close his fingers. Fluoroscopic examination at intervals revealed an increase in the size of the tumor, particularly in the mediastinum. There was not an appreciable enlargement of the tumor in the supraclavicular space.

About eight months after the onset of the symptoms, the swelling began to disappear in the right arm, possibly due to an improvement in the collateral circulation. There were many veins over his chest which became more prominent, and they extended into the right arm. The respiratory excursion in the right chest diminished greatly, and it appeared that he was breathing entirely from his left side. He had some increase in the amount of coughing, but without production of sputum. He had a sensation of choking, and at times he expressed a fear that he would choke to death. About ten months after the onset of his symptoms the patient seemed to have less pain in his arm than previously. We were able to reduce the amount of opiates necessary for relief. At about this time, September 1, 1938, there developed considerable swelling of his left arm, and the left brachial vein became thrombosed. This thrombosis extended as far back into the axillary area as we were able to palpate. With this thrombosis there also occurred swelling on the left side of his face and in the neck. On September 15, 1938, the patient was found dead in bed, apparently from a thrombosis.

A partial autopsy was performed by Dr. Richard Ching. He made the following observations:

Gross Anatomy.—"On external examination there was noted a brownish discoloration on the right shoulder, neck, and chest which was probably due to the X-ray treatments. There was marked emaciation of the entire body with atrophy of the right

upper extremity. There was a moderate swelling of the left arm and forearm and some swelling of the face. There was evidence of a collateral circulation over the anterior chest and abdomen. The anterior chest wall and sternum were removed, revealing the contents of the cavity. The left lung was negative. There was a tumor situated in the apex of the right pulmonary cavity. This tumor was of bony hardness and cut with marked resistance. It had the gross appearance of being a carcinoma. The tumor extended far into the neck and involved the brachial plexus. There was a definite line of cleavage between the tumor and the apex of the right lung, and by blunt dissection it was possible to dissect the tumor away. There was some slight infiltration of the tumor into a small portion of the lung. It extended into the mediastinum, involving the greater vessels, with evidence of obstruction of the circulation. No further dissection was done."

Microscopic Examination. (Fig. 5.)—A

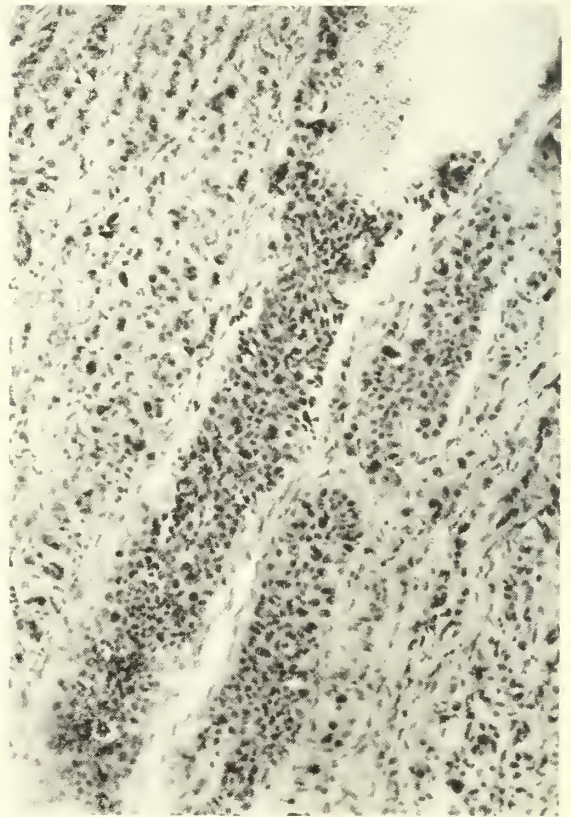


Fig. 5.—Photomicrograph of a section of the tumor taken from tissue near the pleura. Note infiltration of the tumor cells into a blood vessel.

section was taken from the tumor at the margin of the lung. On microscopic examination there was observed an infiltration of the pulmonary tissue for a distance of about two centimeters. There was a large amount of hyaline degeneration in the tumor and a good deal of fibrous tissue in the hyaline material. Whether this fibrous tissue was forming a capsule is indefinite, but I am inclined to think that it was not. The malignant cells were large, polygranular, and had a grayish nucleus and cytoplasm. The cells tended to grow in cords, and from place to place imperfectly-formed endothelium-lined spaces were seen. They appeared to be endothelial cells, as they did not resemble lymphoid tissue. A section through a gland taken from the mediastinum showed the same pattern.

Pathological Diagnosis. — Endothelioma of the pleura with slight invasion of the pulmonary tissue and extensive invasion of the adjacent pleural tissues of the neck and brachial plexus. Metastasis to the lymph glands in the superior mediastinum. Terminal occlusion of the superior vena cava with thrombosis of the left axillary vein.

COMMENT

In most of the cases observed, the origin of the tumors has been from the terminal

bronchioles, or they have been metastatic lesions from carcinomas of other organs. There have also been reports of sarcomas and other types of tumors. This created the objection to the term coined by Dr. Pancoast—"superior pulmonary sulcus tumor."

The case that we are reporting seems to conform more nearly to the description of the original cases by Pancoast. The tumor arose from tissues outside the lung and was definitely not a metastatic tumor. At the time of the X-ray examination there was no evidence of erosion of the ribs or vertebrae, but this was comparatively early in the duration of the case. This patient lived approximately ten months after the onset of his symptoms. There was no appreciable relief from his symptoms by the X-ray treatments, and there was no evidence of retardation of the growth.

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107th ANNUAL MEETING, CHATTANOOGA

Hotel Patten

April 9, 10, 11, 1940

THE FUNCTIONAL INVESTIGATION OF THE CONTRACTED PELVIS*

(Test of Disproportion)

B. LORINCZ, M.D., Director of the Hospital for Women, Ujpest, Hungary

PROFESSOR DAVIDSON, Master of the Rotunda Hospital, Dublin, Ireland, was the first to suggest a functional test for contracted pelvis. The Irish are largely Catholic, and the Catholic Church does not concede multiple Caesareans to be an indication for sterilization. For this reason Davidson thought of a method which would avoid this still dangerous operation. Perhaps you are surprised that I consider a Caesarean a dangerous operation, although my attitude is shared by many obstetricians here in the states. Permit me to quote E. Schuman, of Philadelphia, who, in the *American Journal of Obstetrics and Gynecology*, February, 1939, wrote the following: "Many case series have been collected either from the larger clinics or from the studies of maternal welfare committees in cities, sometimes in states. From an analysis of these statistics it has been shown that the maternal mortality following Caesarean operations throughout the United States is 5.8 per cent, while the infant is lost 8.5 per cent of all cases. Inasmuch as an almost six per cent mortality is far higher than that following comparable abdominal operations for other conditions, as, for example, hysterectomy for fibroids, it has been properly felt by the profession that abdominal hysterotomy is all too often selected as a method for delivery and that the indications for its use have been broadened unwarrantably." The quoted maternal mortality is aggravated by the fact that every successive Caesarean section performed upon the same woman appears to have a still higher mortality rate. Siegel, a German obstetrician, from a mass of statistics, calculated that a second Caesarean is attended with a eleven per cent and the third Caesarean with a twenty-eight per cent mortality

rate. Possibly multiple adhesions following the abdominal operation account for this really high mortality rate. But this is not all. Another disadvantage to the woman is a marked diminution in fertility, a sequence one cannot lightly ignore. Very likely the uterine scar interfering with the nidation of the fertilized ovum accounts for this loss of fertility.

The high maternal mortality rate and the diminution of fertility should prompt us to seek some method or procedure whereby this dangerous interference can either be avoided or at least restricted to that small number of women for whom no other help exists. While a contracted pelvis continues to be a primary indication for a Caesarean, Davidson thought, that through a functional investigation of the bony pelvis, one could select those cases upon which one should safely undertake a premature delivery instead of performing an abdominal hysterotomy. I am not going to discuss indications, prognosis, and methods of artificial premature labor, for you already know them. As far as I was able to ascertain from English journals, no one in England follows Davidson's instructions concerning premature labor, because they believe it too dangerous to both mother and child. Now I wish to stress the following: can a functional investigation of the contracted pelvis by itself diminish the number of Caesarean sections?

Before continuing, permit me to explain the meaning of the expression "functional investigation." If somebody wants to buy a motor car, he is not contented by the praise of the dealer, or by examining detailedly all the parts of the car; he will, I am sure, take a drive in it to see the machine function. Or with other words, he will make a functional investigation of the car before he pays a cent for it. The same is true with the women who have contracted

*Read before the Chattanooga and Hamilton County Medical Society, Chattanooga, July 12, 1939.

pelvises—we wish to see in function those pelvises. This idea has developed in the prenatal clinic, where every gravid woman is examined and controlled. Every primipara, or multipara, with a history of operative delivery is examined internally. This latter is done routinely after “quickening” rather than during labor, when such an internal examination might be dangerous. This examination answers then twelve questions:

1. Perineum—Is it high, is it low, is it rigid, is it elastic?
2. Os coccyx—Is it movable, how is its shape and situation?
3. Ischial spines—Are they protruding into the pelvis?
4. Os sacrum—Is it concave, flat, convex in vertical and in transversal direction? Is it smooth or rough?
5. Symphysis—Is it broad or narrow, slanting or perpendicular? Is it smooth or rough?
6. Terminal line—Can your finger reach it everywhere or not? Is something extraordinary on it?
7. Cervix, extern os, amniotic membrane?
8. Presenting part—Head, breech, or foot, etc.?
9. Promontory—Is it to be reached? Is it simple? Is it double? Prominence?
10. Diagonal conjugate?
11. Real conjugate?
12. Symphyseal arch?

These findings are faithfully noted upon the patient's chart and become available, even though the patient may be readmitted to the delivery room years later. We know well that the bony pelvis never changes. This precise data enables us to recognize not only a contracted pelvis, but also the degree of contraction, and only those with a moderately contracted pelvis will be subjected to a functional investigation. I consider a pelvis to be moderately contracted when the true conjugate is not shorter than 8.5 centimeters in a generally contracted pelvis, or eight centimeters in rachitic flat pelvis.

All the patients with true conjugate be-

tween accepted normal and the above-mentioned length are requested to come to the hospital when the period of gestation has arrived at the thirty-sixth to thirty-seventh week. This time must be carefully reckoned because it can occur that as a result of the test, labor may ensue. Once admitted the patient is prepared as for a laparotomy. Then, with careful aseptic technic, under deep anaesthesia, the patient is examined internally. The anaesthesia must be deep, for only a deep anaesthesia will completely relax the abdominal musculature, and ethylchloride, evipan or nitrous oxide will serve well. While the examiner's fingers are in the vagina, he orders the assistant to push the fundus of the uterus downwards. Please follow me now with your imagination. The pressure of the assistant moves the child's head into the pelvis, where the finger of the obstetrician controls its descent. At the same time his free hand directs the descending head into the inlet of the pelvis, while his thumb checks the surface of the head for its prominence over the symphyseal plane. This examination will show one of five degrees of disproportion, i.e.:

1. The head cannot be pushed into the brim of the pelvis at all, and on palpation with the thumb the front of the head will be found to be considerably overriding the front of the symphysis pubis so that the passage of the thumb upwards is completely arrested.
2. The head can be made to bite the brim, but cannot be pushed into it. On palpation with the thumb of the vaginal hand, the anterior surface of the head will be found to be almost flush with the anterior aspect of the symphysis pubis, or may even slightly override it.
3. The head can be pushed into the brim, but not through the brim and the vertex of the head does not reach the interspinal line.
4. The head can be pushed as far as the ischial spines. This indicates that there is no disproportion, but that there is not the normal amount of reserve space between the brim and the head.

5. The head can be pushed down to the pelvic floor, the vertex descends beyond the interspinal line. There is no disproportion and the ample reserve space around the head appears adequate to accommodate the increase in size expected in the remaining three to four weeks.

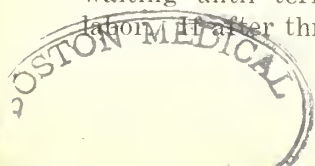
After having ascertained the degree of disproportion one must decide upon a course of procedure. The first and fifth possibilities are easily decided upon. In the first degree, the disproportion is so great that even an eight-month premature infant cannot pass through the pelvis. There is therefore nothing else to do but to wait until term and onset of labor and do a Caesarean operation. When the fifth degree of disproportion is encountered one may also safely wait until term, for here one can expect a spontaneous delivery, especially when there is ample reserve space around the head. It is true that a very careful obstetrician might order the patient to return for another functional investigation in a fortnight, for, after that interval, the growing head may give a better clue to the correct procedure—to wait for term or to induce a premature labor. From experience we know that the intrauterine infant increases in weight 150 to 200 grams weekly, in which the infant's skull participates equally during the last four weeks of pregnancy. These points must be borne in mind while making a decision.

More serious troubles can occur with the remaining three degrees of disproportions—numbers two, three, and four. It is impossible to give set rules for their management, for these require the keenest of obstetrical judgment in order to determine the proper procedure. Only after weighing carefully the results of the test, the possibilities, the age, and the strength of the woman, can one decide what can best be done. However in the fourth eventuality, i.e., where the head could be pushed so deeply that the vertex reached the interspinal line and the descended head covered more than half of the sacrum, I would suggest waiting until term and giving a test of labor. If after three to four hours of labor

the head failed to descend and to mold, or failed to effect fair progress during that time, so that the head remained movable above the brim, I would not hesitate to perform a section. Further delay might be fatal, for once the head is fixed into the brim, one may have during the section great difficulty in extracting it from the pelvis. One must also remember that within a few hours after onset of labor and rupture of membranes, vaginal bacteria have invaded the uterine cavity. Because membranes have a tendency to rupture early in patients with contracted pelvis, one should not fail to take advantage of operating *early* before the optimum time for section has passed by.

In the second and third eventuality the head can be forced into the brim, but not farther. In these cases, Davidson suggests induction of premature labor at once to avert a possible section. I don't follow this suggestion, and I have very earnest reason to do so. I learned from Davidson's description that he has induced 286 premature labors in the last ten years. He lost one mother and twenty infants. It is true that the maternal mortality is far less than after laparotomy hysterotomy. But the infants lost is seven per cent, which is hardly less than after Caesarean section. These statistical data are taken from the first ten days of the infant's life. But we do know that the prematurely born babies are exposed to an almost twenty-five per cent mortality in their first year of life. Besides this he tells us honestly that among the 286 prematurely induced labors he has been forced to perform section nine times, pubeotomy six times, version and extraction three times, and forceps thirty times. If we survey all the dangers to which the mothers and especially the infants are exposed by these operations, I think you will agree with my opinion, which is to wait for the end of the pregnancy in the second and third degree of disproportion either, and as soon as the labor starts to do the section.

Gentlemen, although I have described five possible eventualities as ascertained by our functional investigation and have tried to suggest suitable courses of procedure for each, I nevertheless appreciate only too well



that one cannot always adhere to set rules in obstetrics. There remain other factors to be considered, i.e., the strength of uterine contractions and the molding capacity of the infant's head, unknowns which the experienced obstetrician recognizes as only during actual labor. With the X-rays one can determine the size and the shape of the maternal pelvis, but the unknowns hang still like dark clouds over the head of the inexperienced obstetrician, creating in him a feeling of uncertainty. Yet with increasing skill, knowledge, and experience, even these can be appreciated and evaluated in time.

I have been using this method in the Hungarian Women's Hospital the past two years, and I must confess that these investigations have brought to us still another result for which we were unprepared. You, no doubt, recall that many research problems in medical history led the research worker to an unanticipated result. This happened to us. We were surprised to find that sixty per cent of our patients so investigated went into labor from a few hours to two weeks after the examination. We have made this comment to Dr. Davidson. He replied that he had had the same experience, but had believed that the premature labor resulted from having so many post-graduate students examine the patient at the same time. However, in our hospital, where only one investigation is made, the patients went still into labor. What could be the cause of the premature labor? In half of the patients the labor started with oozing of the amniotic water and in the other half with simple contractions of the uterus. It is very probable the induced labor may result from rupturing the membranes, as it is not unreasonable to conclude that energetic pressure on the uterine fundus presses the membranes so that they rupture spontaneously. For that matter many obstetricians induce premature labor by simply rupturing the amniotic membrane. For the other half of the cases, I have no definite explanation, although I believe that the quickly descended head irritates the cervical ganglions, which send

stimuli to the uterine muscles until the uterine cavity is emptied.

This unexpected result of the functional examination led to another thought, that one might thus easily induce labor upon a deeply narcotized woman, when either she is post term or in those in whom the infant has died intrauterine. And at the same time one can ascertain the possibilities of a delivery from below. I know from experience that it works in those patients past term and assure you that the method is quite harmless, as it can be done, that the descent of the head can be controlled rectally as well as vaginally.

Gentlemen, of course, you know that this method has its indication and its contraindications. It can only be used in vertex presentations. Although Davidson suggests external version for breech or transverse presentation, I have never tried doing so. Nevertheless I am convinced that it can be very useful to ascertain the presence and degree of disproportion between pelvis and head. I have never experienced any ill effects to either mother or child, although theoretically such exists, i.e., energetic pressure upon the fundus may cause premature separation of the placenta and hemorrhage. Therefore we use only palms and apply pressure to the fundus with increasing force like a crescendo in music. Really, after two years we have yet to see any ill effects to mother, child, or placenta. And blood loss during and after labor has always been within normal limits.

There is only one really serious contraindication—that the method or test may induce labor and infants will be born that would otherwise have continued intrauterine life to full term. For this reason we exercise utmost care never to perform this test before the thirty-sixth week of pregnancy.

Conclusions.—The functional investigation of the contracted pelvis helps us to make a more accurate prognosis for the awaited delivery. It reduces the number of Caesarean sections admitted to be dangerous to both mother and child. It can be used to induce labor upon patients past term or upon patients with dead intrauterine infant.

A BILL

To Promote the National Health and Welfare Through Appropriation of Funds for the Construction of Hospitals

BE IT ENACTED by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "National Hospital Act of 1940."

SEC. 2. For the purpose of assisting states, counties, health or hospital districts, and other political subdivisions of the states in providing better health and medical services through the provision of needed hospital facilities to serve rural communities and economically depressed areas, there is hereby authorized to be appropriated to the Public Health Service for the fiscal year ending June 30, 1941, the sum of \$10,000,000 and for each fiscal year thereafter such sums as the Congress may deem necessary for carrying out the purposes of this Act. Amounts appropriated under this Act shall be available until expended.

SEC. 3. States, counties, cities, other political subdivisions or parts thereof alone or in combination wishing to participate in the benefits contemplated by this Act shall make application to the Surgeon General of the Public Health Service (hereinafter referred to as the Surgeon General). Said applications shall contain information necessary to establish the existence of need for hospitals, to give assurance acceptable to the Surgeon General that such hospitals will be made available under appropriate conditions to all groups of the population, will be maintained in good repair, and will be utilized in furnishing service of satisfactory quality, in accordance with regulations hereinafter authorized to be prescribed.

SEC. 4. There is hereby established the National Advisory Hospital Council (hereinafter referred to as the "Council") to consist of the Surgeon General as chairman and six members to be appointed by the Surgeon General with the approval of the Federal Security Administrator. The six appointed members shall be selected from leading medical or scientific authorities who are outstanding in matters pertaining to

hospitals and other public health services. Each appointed member shall hold office for a term of three years except that (1) any member appointed to fill a vacancy occurring prior to the expiration of the term for which his predecessor was appointed shall be appointed for the remainder of such term, and (2) the terms of office of the members first taking office shall expire, as designated by the Surgeon General at the time of appointment, two at the end of the first year, two at the end of the second year, and two at the end of the third year after the date of the first meeting of the Council. No appointed member shall be eligible to serve continuously for more than three years, but shall be eligible for reappointment if he has not served as a member of the Council at any time within twelve months immediately preceding his reappointment. Each appointed member shall receive compensation at the rate of \$25 per day during the time spent in attending meetings of the Council and for the time devoted to official business of the Council under this Act, and actual and necessary traveling and subsistence expenses while away from his place of residence upon official business under this Act.

SEC. 5. The Council is authorized to advise the Surgeon General with reference to the carrying out of the provisions of this Act, including—

(a) The review of applications for hospitals submitted in accordance with and meeting the requirements of section 2 and recommendation of such projects as in its opinion are needed, will be adequately maintained, and otherwise will fulfill the requirements of this Act;

(b) The formulation of standards which are necessary to insure proper conduct of the hospitals and care of persons served by the hospitals;

(c) The formulation of rules and regulations necessary to carry out the provisions of this Act;

(d) The review of reports and inspections, and when necessary, the making of inspections, with reference to professional service and standards of maintenance of the hospitals.

SEC. 6. In carrying out the purposes of this Act, the Surgeon General is authorized and directed, after consultation with the Council—

(a) To conduct, assist, and foster studies and surveys with respect to needs for hospitalization and problems of hospital operation;

(b) To approve hospital projects, to designate the location, type, equipment, and size of hospitals, and to allocate available funds to such approved projects;

(c) To provide training and instruction of personnel who will be required in connection with the hospitals;

(d) To cooperate with state and local health and welfare authorities and with professional agencies;

(e) To secure reports and to make inspections with respect to professional service and standards of maintenance of the hospitals and other matters pertinent to carrying out the purposes of this Act;

(f) To adopt such additional means as may be found necessary or appropriate to carry out the provisions of this Act, including the safeguarding of the quality of service furnished in hospitals;

(g) To make, with the approval of the Federal Security Administrator, such rules and regulations as may be necessary to carry out the provisions of this Act;

(h) To lease hospital projects when completed to the applicant for an indefinite period, the consideration for such lease being the maintenance and operation of said hospital in accordance with the provisions of this Act. If at any time said maintenance and operation by the applicant shall fail to meet such provisions, the lease shall be terminated by the Surgeon General on six months' notice.

SEC. 7. When a hospital project has been approved by the Surgeon General, in accordance with the provisions of this Act, it shall be certified by the Federal Security Administrator to the Federal Works Agency for construction and there shall be allocated

and transferred to the Federal Works Agency, out of funds appropriate pursuant to this Act, so much of the appropriation as may be determined to be available for the project, and the Federal Works Agency is authorized to expend such sums for the planning, execution, and construction of the project and pertinent facilities, including administrative expenses, site acquisition, the preparation of working drawings and specifications, award of all necessary contracts and supervision of construction; and the Federal Works Agency is further authorized to expend out of appropriations available to it in accordance with the purposes thereof, such sums as may be necessary for the completion of the project, but without regard to specific limitations imposed on the use thereof. Title to the properties so constructed, and to the equipment installed therein, and to the land upon which they are located, shall be in the United States.

SEC. 8. The Federal Security Administrator is authorized to accept on behalf of the United States gifts of money, equipment, and land to be utilized in carrying out the purposes of this Act.

SEC. 9. The President is authorized to allocate from funds appropriated pursuant to this Act, for the fiscal year ending June 30, 1941, a sum for all necessary expenses of the Public Health Service in administering the provisions of this Act, including the training of personnel; and there is hereby authorized to be appropriated in each succeeding fiscal year such amounts as the Congress may deem necessary for such purpose.

SEC. 10. (a) There is hereby authorized to be appointed in the Public Health Service, in accordance with applicable law, such additional commissioned officers and other personnel as may be necessary in carrying out the provisions of this Act.

(b) On recommendation of the Surgeon General, the Federal Security Administrator shall submit to the Bureau of the Budget on or before September 15 of each year a list of approved hospital projects under this Act and cost estimates thereof, together with such other data as may be necessary for the preparation of the budget estimates.

(c) This Act shall not be construed as superseding or limiting (1) the functions, under any other Act, of the Public Health Service or any other agency of the United States relating to the prevention, diagnosis, and treatment of disease; or (2) the expenditure of money therefor.

(d) The term "State" as used in this Act shall include also the territories and insular possessions of the United States.

(e) The term "hospital" as used in this

Act shall include the physical facilities necessary for the prevention, diagnosis, or treatment of disease, and for the protection of the public health.

(f) The Surgeon General shall include in his annual report for transmission to Congress a full report of the administration of the Act, including a detailed statement of receipts and disbursements.

(g) This Act shall take effect thirty days after the date of its enactment.

CASE REPORT: PELLAGRA DUE TO CARDIOSPASM

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S. F. B., aged forty-nine, male, married, was examined June 16, 1937. His chief complaint was indigestion which he had had the past one and one-half years. He stated that during this period he had vomited nearly all the solid food he ate. Vomiting came on while at the table. He also stated he had a sensation of food stopping in the lower end of the esophagus and the food was regurgitated immediately. Even water and thin liquid foods were regurgitated unless they were taken slowly and in small quantities. He had lost twenty-five pounds in weight during the past one and one-half years. During the past three or four months he had noticed red papular lesions on the dorsal surfaces of the arms and legs; also there were similar lesions on the anterior surface of the neck.

His physical examination revealed skin lesions characteristic of pellagra. The teeth were carious and the gums showed a moderate amount of pyorrhea. The general physical examination was essentially negative. The urinalysis was negative. The blood count showed a secondary anemia. The blood Wassermann test was negative. A gastric analysis was attempted, but no gastric secretion was obtained. X-ray of the esophagus showed an obstruction at the

cardiac end of the stomach. The obstruction appeared smooth in outline and the remainder of the esophagus above was widely dilated. The patient was given atropine and the esophagus was again examined with the fluoroscope and X-rays were made. No change in the appearance of the esophagus was noted.

The esophageal lesion was dilated by Dr. D. Isbell with excellent results. He reported that in the stenosed area there was no induration or scar tissue. It was his conclusion that this was a case of cardiac spasm. The patient was put on large doses of brewers' yeast and a high vitamin diet. Four months later he had gained thirty pounds in weight, the skin lesions had all disappeared, and he stated he was feeling fine. In an inquiry a few weeks ago, he stated that his health had remained good.

Pellagra, due to an esophageal lesion, is rare. Dwight and Wilbur, in *American Journal of Digestive Diseases and Nutrition*, Vol. IV., No. 11 (January, 1938), pages 720-728, reported a case of pellagra due to an esophageal stricture caused by lye. As far as I can determine this is the only other case of pellagra due to an esophageal lesion which has been reported in the literature.

ASTHMA IN GENERAL PRACTICE*

TOLBERT C. CROWELL, M.D., Chattanooga

THE OBJECT of this paper is to discuss some of the most common conditions found in the management of asthmatic patients and to point out a few simple procedures that I have found helpful in the treatment of these sufferers.

DIAGNOSIS

The diagnosis of asthma is not difficult. It is often made by the patient himself. If seen during the midst of an attack, there appears the characteristic wheezing, together with the orthopneic position, but if seen during the free interval, there are usually no characteristic signs. In the latter instance, the history is of the greatest assistance. If the patient gives a history of periodic or recurrent attacks of acute dyspnea, accompanied by wheezing and occurring especially at night, a diagnosis of asthma can safely be made in most patients. It must be remembered, however, that Cavalier Jackson's dictum is true: "All that wheezes is not asthma." There is a relatively small percentage of patients in whom the history of asthma is so indefinite as to render the diagnosis difficult. The conditions which produce symptoms and closely resemble those of asthma are quite numerous. They may be cardiac, pulmonary, mediastinal.

Cardiac asthma is a paroxysmal type of dyspnea, accompanied by wheezing respiration which may or may not occur at night, and occurs in people past middle age. This condition may so closely resemble bronchial asthma in its physical signs that a differential diagnosis cannot be made from a physical examination of the chest alone. It occurs in patients with organic diseases of the cardiovascular system. It is thought to be due to a sudden and relative failure of the left ventricle occurring in a patient whose right ventricle is functioning normal and producing in turn acute pulmonary

hypertension, resulting in pulmonary emphysema and edema. There is usually a history of some variety of precordial pain and a patient will always reveal some hypertension, murmurs, and various degrees of enlargement. These patients do not respond well to adrenalin, but better to morphine, and the skin reactions are negative.

Chronic bronchitis in older people may simulate asthma because of its frequent association with chronic emphysema accompanied by loud sonorous rales, or even wheezing, but without the dyspnea and other signs of usual asthma. This type is often referred to as asthmatoïd bronchitis.

Foreign bodies in the air passages, especially in children, must be kept in mind. But the inspiratory character of the breathing, as well as the sighs, the direct examination with the X-ray or bronchoscope will suffice to make the differentiation. Then finally thymic asthma, which is seen in infants, characterized by cyanosis, respiratory dyspnea which may be paroxysmal, or asthmatic in type. In such cases, the X-ray examination followed by X-ray treatment of the thymus are important aids in the diagnosis.

ALLERGIC AND NONALLERGIC TYPES

Keeping in mind these differential features, the diagnosis of asthma is made possible in most cases. By having determined that the patient has bronchial asthma, we must next determine whether the asthma is allergic or nonallergic. That is whether it is hypersensitive, where the patient is found to be abnormally influenced, or effected by a variety of substances, as brought out both by history and by skin tests, or whether the patient is nonallergic and, therefore, not skin sensitive and is usually referred to as asthmatic bronchitis. This asthmatic bronchitis may be distinguished from allergic asthma by the following features:

1. The family history in the allergic, or sensitive type, is usually positive, and there

*Read before the Tennessee State Medical Association, Jackson, April 11, 12, 13, 1939.

is a personal history of other allergic disturbances. These features are negative as a rule in the nonallergic type.

2. The onset of asthma in the allergic type is usually in childhood or young adult life, usually before thirty-five. In the nonallergic type, it is most common in an individual past middle life.

3. In the nonallergic type, the attack usually begins with a cough or chronic bronchitis, which, as it progresses, becomes associated with wheezing and cough. In the allergic type wheezing is the most prominent symptom.

4. In the nonallergic, or bronchitis type, complications such as emphysema and bronchiectasis are frequent. In the allergic group they are not common.

5. The skin reactions in the allergic group are positive, whereas in the nonallergic, or bronchitis group, they are negative.

By keeping in mind these factors, these two important groups of asthmatic patients can be segregated, but as in all other allergic conditions, the patient's diagnosis will depend upon: (1) the history and examination; (2) allergic tests; and (3) therapeutic trial.

THE HISTORY

The history is the most valuable aid in the asthmatic patient. It helps in determining that the patient is either allergic or nonallergic and will consist in determining the character of the particular substances to which he is sensitive. Find out whether the symptoms are seasonable, occurring mostly in summer or in winter. If the former, pollens are suspected; if the latter, bacterial infections. If the symptoms occur following a cold, with considerable cough and mild elevation of temperature, especially in children, at any season of the year, bacterial asthma is suspected. The colds, however, may be only hay fever manifestations, and the diagnosis must be guarded until a thorough examination is completed. If the secretion from the nose remains clear and contains eosinophiles, the suspicion is a hypersensitive, or hay fever, condition. But where the secretion soon becomes colored and muco purulent, infection is present. In women, the relation of the attack

to menses, to puberty, or to menopause, may indicate an endocrine factor. If the attack occurs only at night, some variety of allergic dust should be suspected in the bedroom. If the attacks occur mostly during the day, and outside of the home or office, we suspect some occupational dust or other factor, as cosmetic disturbances, if in women employed in congested environment, such as stores, etc. Ascertain if the asthma disappears when a patient is removed from the home or goes on a vacation, and reoccurs when the patient returns. Inquire about the effect of inhalants, such as house dust, fumes, flower dust, smoke, pet animals, etc. Does any food cause nettle rash? Is there an association of this with the attack? Inquire also as to the effect of heat and cold, temperature changes, and humidity—if the patient has had eczema occurring in infancy or childhood or attacks of migraine or intestinal disorders. These suggest possible food sensitization. Is there a positive family history of asthma in the immediate or near relatives? Get the details of the social history of the patient, his occupation, home environment, particularly the type of bedding used, personal habits, such as smoking or drinking, irregular hours of sleeping, or eating, all of which have an influence upon the attacks. If the physician will spend a few minutes in questioning closely the patient along these lines and will repeat the questions on a subsequent visit or visits, much valuable information will be obtained, and the course of his treatment will be immensely facilitated.

SKIN TESTS

The history suggests certain important causative agents, but definite proof is needed to establish a relationship to the asthmatic symptoms. In the allergic patient, the vast majority will react positively, and a definite connection can be established between the history and the tests. It is easy for the physician in general practice to provide himself with materials for testing. Many manufacturers are supplying these, all of whom are reliable. From sixty to seventy-five test materials for cutaneous, or scratch tests, will suffice for a fairly complete set of testing materials. These are marketed,

ready for use, and reasonably priced. Thirty or forty of these materials should consist of principal foods, and fifteen or twenty each of the pollens, the inhalants, and the dust or the epidermal groups. Scratch testing is the safest and most practical for the physician in general practice.

Experience is essential in the reading of the reactions and the interpretation of the tests. It must be remembered that positive tests means only that the skin is sensitive to that particular allergen and whether it bears any relation to the patient's symptom will remain to be proven. Positive reactions must be checked with the history to verify them if possible. Then they must be subjected to therapeutic trial. A large number of substances may react, but only a few may have clinical significance. All positive reactors should be excluded, especially in the case of foods, if possible. Then a new diet may be built up, adding new foods from time to time, as the case progresses, without regard to reactions. Negative tests fail to exclude possible sensitiveness just as a negative Wassermann test may fail to exclude syphilis. From the foregoing statements, it is clear, therefore, that complete reliance cannot be placed upon skin tests. Indeed, they are far from perfect, but when worked in with the history, they are valuable aids. In the allergic patient, particularly those suffering from inhalants—dust, pollens, fumes, etc.—the tests will be of much greater value. In my experience less value may be placed upon food tests.

THERAPEUTIC TRIAL

The therapeutic trial may be found most useful as a diagnostic method, particularly in those patients who are allergic with negative skin tests. This is especially true in food sensitive patients. In such cases a Rowe diet, or a modification, may be used to an advantage, and when new foods are added frequently food sensitiveness may be uncovered in that manner. Therapeutic trial may also be of an advantage in bacterial asthmatics whose skin tests are negative, when an injection of a small quantity of the autogenous vaccine will produce asthma. I use this method in young chil-

dren particularly and agree with several authors that most bacterial substances should be able to induce an attack of asthma upon injection of a slight overdose. Frequently the removal of a patient from his home to a hospital or another house is another good therapeutic trial.

TREATMENT

Symptomatic Treatment in Acute Asthma.—There are various remedies for the relief of acute asthma.

Adrenalin (epinephrine) remains the safest and most reliable drug for the relief in most cases. The commonest error in the use of adrenalin is in giving too large doses. Four or five minims given early in the attack will usually give relief as effectively as larger doses, then nervous manifestations will be minimized. Repeated small doses are much better tolerated than a single large dose, but emphasis should be placed on giving it early in the attack. While asthma is severe and larger amounts are required, a cubic centimeter or more may be injected slowly over a period of fifteen minutes or more, and in my experience has proved very advantageous. Where repeated attacks of asthma occurs, a member of the family should be instructed to give the adrenalin. The drug is not habit forming and has no harmful effects upon the tissues. This fact should be emphasized, as most patients with asthma are fearful of the continued use of adrenalin. Should tachycardia develop from large or repeated doses, then its use should be discontinued and other measures substituted. The use of 1:100 adrenalin solution by nebulizer has proved useful in the milder attacks, especially in children, but it is usually not effective in severe attacks. Dryness of the throat with occasional pain in the epigastrium are often complained of.

During the past year there has been introduced a slowly absorbed epinephrine solution. It possesses the distinct advantage of being gradually absorbed from the tissues over a period of twelve hours or more, thereby making unnecessary repeated injections as is required in the ordinary epinephrine. I have prepared in my lab-

oratory the gelatin-epinephrine mixture according to the method of Drs. Spain, Strauss, and Fuchs of the Department of Allergy, New York Postgraduate Medical School, Columbia University. This mixture is two and one-half times the strength of ordinary epinephrine, and is injected subcutaneously in three or four times the usual doses. The usual symptoms of pallor, palpitation, and tremor occur infrequently, and then are delayed for about thirty minutes after the injection. This is the most important contribution to the use of epinephrine that has occurred in recent years. Unfortunately, this preparation is not now on the market, but I feel certain will be available in due time.

Ephedrine is fairly effective in the milder asthma, but soon loses its effectiveness and causes marked nervous symptoms even when combined with sedatives. Its use in general has not been very satisfactory. Like adrenalin, however, it must be used early in the attack, and always in combination with phenobarbital or amytal.

Stramonium leaves, or so-called asthma powders, often affords relief in the mild attacks, but their use should be discouraged because of the irritating effects on the throat and bronchi and a consequent aggravation of the asthma.

Aminophylline is occasionally of benefit in the mild asthmas and may be used as a substitute for adrenalin, either where adrenalin is not particularly effective or its long-continued use has undesirable effects. In the acute attacks, it may be given intravenously in doses of ten to twenty cubic centimeters if adrenalin has lost its effect.

Morphia should not be used in asthma when adrenalin relieves the attack. It may be used, however, only when adrenalin fails or is contraindicated as in tachycardia or coronary diseases. Use it only when other measures fail, and combine it with atrophine ($\frac{1}{4}$ and 1 150), or use dilaudid 1 32 grain, if patient has an intolerance or is allergic to morphine dionin one-fourth to one-half grain may be given.

The frequent intravenous use of calcium, iodides, hydrochloric acid should be discouraged as they are seldom effective.

General Hygienic Measures.—Keep the patient perfectly quiet and warm, as these cases are usually quite cold—any comfortable position, propped up if desirable, adequate ventilation in the room—and keep the company away. Bowels must be kept open, using enemas or saline cathartics. These patients do not desire food, and it should not be forced. Soups or broths, or soft cereal, will suffice. Plenty of fruit juices if desired, but not ice cold.

Status Asthmaticus, or Very Severe Asthma.—First try the slow injection method of adrenalin—one-half cubic centimeter over twenty or thirty minutes. If not effective aminophylline, ten to twenty cubic centimeters, may be given intravenously. If this proves ineffective, then intravenous adrenalin, 1 10,000, may be used. It must be given slowly with caution and discontinued promptly if tachycardia occurs. If the patient is unrelieved by these measures, ether and olive oil, equal parts, five to seven ounces for adults, one-half to two ounces for children, by rectum, allowing twenty minutes for its administration. No cleansing enema is necessary. Finally, if these measures have not proved satisfactory, morphine or dilaudid should be used. In the toxic or dehydrated type of case, intravenous glucose should be given.

CHRONIC ASTHMA

The treatment of chronic asthma or non-allergic asthma, which is primarily of the asthmatic bronchitis type, is frequently a difficult problem. On physical examination, which must be thoroughly and carefully done, there may be found infected tonsils or teeth, and sinusitis which often accompanies the bronchitis. In this group of asthmatics, removal of such infected foci early is very advantageous with respect to the improvement of the patient's general health. In no instance can the patient expect to get relief of asthmatic symptoms from the removal of tonsils or sinus drainage alone. Measures to liquefy bronchial mucus are indicated. Potassium iodide is the drug of choice. The vast majority of these cases will respond well to a mixture of potassium iodide, tincture lobelia with or without ephedrine. In such cases the use of iodized

oil intratracheally may be used. This measure is used very little at present with a few exceptions. In the majority of such cases they will respond equally as well to the iodide mixture previously mentioned. Another measure of great importance is the use of vaccines prepared from nose or posterior pharynx or from the muco purulent sputum. Such vaccines can be prepared by any good bacteriologist and can be administered in doses to suit the reactivity of the patient. Frequently beta hemolytic streptococci predominates. In such cases protelyn may be given with good results.

THE PROPHYLACTIC TREATMENT (ALLERGIC ASTHMA)

In the treatment of this type of asthma, the patient must cooperate, or satisfactory results cannot be expected. Here the foundation is laid for overcoming future asthma and the treatment necessarily must be given over a period of many months, and unless full cooperation is given the doctor, no treatment should be attempted. This should be made very clear to the patient before beginning. Emphasize also that it offers the only hope of permanent relief. Prophylactic treatment may be divided into two methods:

1. Elimination or avoidance of contact with excitants such as dust, animal elimination, fumes, etc.

2. Desensitization. This method should be used where the patient cannot avoid contact. In such cases treatment material consisting of a series of injections must be given. The necessary pollen extracts, dust extracts, or orris extract can readily be obtained through many dealers in these products or an allergist who supply the materials

ready prepared. The physician should familiarize himself with the administration of such extracts thoroughly before starting these injections.

The results in the prophylactic treatment of asthma is satisfactory in about seventy-five per cent of cases. Some will respond promptly, others will require many months of patient work, but in all cases the response to treatment will be only as good as the careful diagnostic foundation. In no chronic condition, which the physician is called upon to treat, is there found more of detailed follow-up and constant attention than in the treatment of asthma. The results obtained will amply justify the effort expended.

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ACUTE RHEUMATIC FEVER*

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TO THOSE who have made a study of this symptom complex, the term "Acute Rheumatic Fever" is a misnomer. Instead "Rheumatic Infection" or "The Rheumatic State" should be more acceptable, for in many instances fever is lacking as a symptom and the infection is much more likely to be recurrent than acute. The term "Rheumatic" also is misleading because this condition may present a series of symptoms such as chorea or carditis without there having been present either joint or muscular pain at any time in its course. Its manifestations are so protean in nature that an appropriate term is therefore difficult to find. Its diagnosis may be equally as difficult.

ETIOLOGY

There is not sufficient evidence at hand at present to designate any one bacterium, or group of bacteria, or any virus, as being the one acceptable etiological factor. There are many factors, both predisposing and factual, that enter into the causation of this symptom complex and most of them can be said to be active in a majority of cases.

In 1900, Poynton and Paine isolated a diplococcus, which they believed to be the exciting agent from the heartblood of a number of sufferers from acute rheumatism. Since then numerous organisms have been reported as being present, the most common group being different strains of streptococci.

Swift¹ and others believe that this condition is an allergic manifestation of a sensitivity to streptococci, and that the varied symptoms presented are due to different types of allergic response to different strains just as asthma and hay fever are different manifestations of an allergic response to certain allergens. Certainly the evidence is decidedly in favor of the streptococcus as being in some way an outstanding etiological factor. Many think that in reality an undiscovered virus is responsible,

and that probably the streptococcus acts as a devitalizing agent, either locally in the nose and throat, or generally, and thus prepares the field favorably for the invasion of this virus.

An interesting number of other predisposing and contributory factors must be considered. We of the South realize that this section is particularly blessed because of the comparative rarity of rheumatic infection here. In our work, with the exception of a very occasional case seen in private practice or on the charity wards, its presence is extremely rare as compared to the number of cases seen in the northern half of this country. Chorea and carditis are much often encountered than the typical rheumatic fever with joint involvement. Unquestionably then climate is extremely important. In this connection chilling of the body, damp, cold living quarters, unhygienic surroundings, improper food, poor nutrition, and conditions aggravated by poverty should be seriously considered as predisposing causes.

The role played by upper respiratory infections, such as diseased tonsils and sinuses, and teeth, as etiological factors, is the subject of considerable argument. Many believe that chronic tonsillitis is an outstanding cause of rheumatism whereas others point out many cases that have developed after tonsillectomy. This may or may not have any bearing on the case since it has been repeatedly demonstrated that, especially in such types of rheumatic infection as chorea and carditis, the disease is of a recurrent or chronic nature, and entrance may have been effected prior to tonsillectomy. Whether the improvement seen in those cases that have been operated upon because of the demonstrable infection in the tonsils is due to the removal of the infective focus, or to a general improvement in health and immunity, is a moot question. Certainly improvement is generally evidenced.

T. D. Jones² in a study of 750 rheumatic

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subjects concluded that colds and sore throats were the "obvious precipitants" of recurrent rheumatic fever in sixty per cent of this series, and stated that "respiratory infection is the most important single factor in the life history of the disease." Scarlet fever is probably the next most common forerunner of rheumatic infection.

Chorea, probably more than the other forms of rheumatic disease, is seen more often in girls than in boys.

Blonds, especially the red-haired, freckled, thin, asthenic type, appear to be more susceptible to rheumatic disease than brunettes or stocky, fat children.

This infection is most often seen between the ages of five to fifteen years and is most prevalent during the later winter and spring months when throat and nose and all other forms of upper respiratory infections are most common. There is also apparently a familial tendency. This is seen to such an extent in some families as to cause some observers to wonder whether the infection is familial or transmissible by contact.

SYMPTOMS AND DIAGNOSIS

An enumeration of the symptoms of this infection in order to be complete should include not only those of simple uncomplicated rheumatic fever, but also of the other two of this triad—chorea and rheumatic carditis, since they are considered generally as being just as much rheumatic infection as is polyarthritis. These conditions may occur singly or together, and cannot be properly classed as either complications or sequelae. When either is encountered in the true textbook form diagnosis is simple, but the symptoms may be so mild that even the patient himself does not remember at all when questioned regarding the history leading to his attack of heart disease ever having had any symptom of joint involvement or any other form of rheumatic infection. Again, perhaps he can remember having had transient joint pains which had been called "leg ache" or "growing pains," or an attack of fever of unknown origin.

The cases characterized by fleeting, changeable polyarthritis, with either slight or severe joint pain, tenderness, and local heat, are familiar. Less easily recognized

are those cases that have little or no pain, but that have a low-grade fever, lassitude, fatigue, probably with sweats, and that so closely resemble tuberculosis cases that the diagnosis is made only by taking a blood sedimentation rate and by hearing a heart murmur. Levine³ emphasizes the frequent resemblance between rheumatic fever, tuberculosis, and syphilis.

"Leg aches" or "growing pains" may or may not be symptoms. Those pains occurring most commonly in the muscles of the legs and thighs and not in the joints, and which occur at night without leaving any stiffness in the day, especially if the sedimentation rate is normal, cannot be attributed to rheumatic infection.

Nontraumatic epistaxis is said to be caused by this infection more often than by any other one cause. It is so commonly seen here that its presence should always arouse our suspicion of the possibility of it being a symptom of rheumatism.

Rheumatic nodules, seen quite commonly in the East, but fairly rarely here, are diagnostic. Too, there is frequently found a circinate erythema, or erythema marginatum, scattered over the abdomen and chest, and this is the most common skin lesion associated with this infection. Recurrent vomiting is not infrequently seen.

CHOREA

The typical incoordinated muscular movements and other symptoms of chorea are considered to be manifestations of rheumatism by most observers, although there is some dispute regarding this assumption. In chorea fever is rare and the blood sedimentation rate is usually normal; however, the same types of cardiac changes that occur in chorea are also seen accompanying the arthritic form. The pathology of chorea⁵ appears to be an undetermined type of brain inflammation and the absence of the typical Aschoff bodies found elsewhere in the body in rheumatic infection is thought to be due to the peculiar histology of brain tissue. Evidently the pathology in chorea is not sufficient extensive to cause much lasting tissue change, since residual lesions are not demonstrable.

CARDITIS

Primary rheumatic carditis may begin so insidiously that diagnosis is not possible until endocardial changes of sufficient severity to cause mitral, or aortic murmurs occur. An outstanding symptom here is the presence of a peculiar pallor with most often a low-grade fever. The murmur may not appear for weeks or months after infection occurs. An electrocardiogram may or may not be of value in making a diagnosis. Shapiro does not consider it to be as valuable as X-ray examination. The X-ray plate will nearly always, sooner or later, show change in the size or contour of the heart.

A diagnosis then of rheumatic disease cannot always be made by any one symptom or laboratory test. A correlation of a number of observations is necessary. The disease is an infection, either very acute or mild, with symptoms referable to the joints, nose, skin, brain, or heart, or any combination of these organs; however, it may be so mild or evanescent that practically none of these symptoms are recognizable. There is nearly always present, especially during the febrile, subacute or acute stage, an increase in the blood sedimentation rate, together with a leukocytosis, and an almost constant secondary anemia. The heart rate is generally increased and fatigue is quite evident.

PATHOLOGY

The finding of the Aschoff nodule in the tissues is pathognomic. This body is seen most often and most typically in the heart muscle, although it does occur in the joints, subcutaneous tissues, and numerous other parts of the body, such as the lungs, peritoneum, pleura, liver, spleen, and other organs.

TREATMENT

Until the causative agent has been definitely established, it is hardly probable that any specific remedy for this infection will be forthcoming. At best, because of its tendency to recur and to develop chorea or carditis, the fight will be a long and often a discouraging one. It happens not to be such a problem in the Southland, but elsewhere it is truly a major one. For instance,

the city of London has an annual expenditure of over one million dollars for hospital care of patients with rheumatic fever.

During the acute stage, when possible, hospitalization is advisable. Here salicylates, sometimes, in very large doses offer us more help in caring for the pain and fever than any other drug. Although not specific in any sense of the word, the salicylates do, in some cases, almost miraculously control the pain. It is debatable whether they prevent recurrences or complications, although some authors claim that they do. Other measures employed are absolute rest in bed, occasionally sedatives, and a nutritious diet, with a rather large fluid intake. Most authorities appear to concur in the idea that meats and other proteins are not to be restricted and think there is no such thing as a true rheumatic diet. A high vitamin intake, especially of vitamins C and B, is important. In cases of carditis, again absolute rest is our one best therapeutic aid. For extreme restlessness, and particularly where there is much pain and a fast pulse, a dose of some mild narcotic, such as codeine, given at bedtime will give the patient the rest needed for the next day's battle. Salicylates are valuable, as in the arthritic type. The advisability of using digitalis, even in the presence of an over-acting heart, is debatable. Of course, in chronic decompensation which may follow acute rheumatic infection, it is almost indispensable, but during the acute stage it may add to the toxemia of the acute infection. Ice bags over the precordial region often seem to be of benefit. If edema threatens, diuretics, such as those of the mercury group, are said to be of distinct value.

The period of confinement to bed must depend on the individual case. In those cases not complicated by carditis, it should be for at least two or three weeks after the temperature has been normal in the absence of antipyretics. Some advise two or three months. In the heart cases, it should be enforced until the acute stage of the infection has subsided. The blood sedimentation rate, leukocyte count, and pulse rate are good indications of the presence or

absence of acute infection. Generally, when the pulse rate remains consistently below 100 at rest, the heart may be considered to be capable of permitting the patient to get out of bed.

Following the acute phase the one most important thing to do is to try to prevent respiratory infections. Tonic treatment, sunlight or violet ray treatments are beneficial. Removal when possible to a tropical or subtropical climate is valuable, although this procedure is not advised by all of the students of rheumatic infection. Too, the advisability of removing foci of infection such as diseased tonsils is debatable. Many observers contend that not only does rheumatic infection occur frequently in tonsillectomized patients, but that tonsillectomy does not prevent relapses or complications. The burden of proof, however, does seem to favor operation when marked infection is present, but only after the blood and clinical pictures prove that the acute phase has been passed.

Sulfanilamide, even in the supposed streptococcic cases, not only appears to be of little value, but is capable of adding to our troubles, and the recent literature on the subject indicates that it is really contraindicated.

As prophylaxis proper housing in a light, warm house, proper hygiene, clothing, and the proper prevention of body chilling are of extreme importance. These conditions, of course, can be best provided in a warm climate.

In the treatment of chorea, rest in bed and quiet, even to the point of isolation from other children or disturbing friends, are imperative. Sympathetic, untiring nursing is invaluable. In those cases of marked incoordination restraint may be necessary to prevent falling out of bed, or self-injury.

Since most of these cases of chorea are relatively mild, it is generally necessary only to use the milder remedies such as the salicylates. Arsenic, generally in the form of Fowler's Solution, has been almost universally used. Its value is debatable. Sedatives are of value, particularly in the more violent forms. The phenobarbital

group is probably more often used than the other sedatives, although bromides, chloral, and others are utilized. Fever therapy has many advocates. Its dangers however are so apparent that the more recent writers advise against its use in the milder forms of chorea. It may be necessary in the severe cases. Whether the hyperpyrexia be induced by mirvanol, typhoid-paratyphoid vaccine intravenously, foreign protein therapy, or by electropyrrexia, its dangers and the great discomfort incident to its usage should prohibit its routine administration, and when it is used it should be safeguarded carefully.

The general treatment during both the acute and convalescent phases is essentially the same as that of acute rheumatic infection.

For all three forms of this disease many hundreds of remedies have been used, and this multiplicity of so-called curative agents is evidence that none of them is specific.

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DISCUSSION

DR. THOS. MITCHELL (Memphis): Dr. Hobson has covered the subject so completely that most any discussion would only emphasize what has been said. However, since the condition recognized as rheumatic fever is of such importance to not only the pediatrician, but to the one who treats adults as well, the matter will bear some repetition.

The American Heart Association estimates that forty-five per cent of acquired heart disease is of rheumatic fever origin. Some authorities believe that to some extent the heart is invariably involved in every acute exacerbation of this disease—the endocardium, the myocardium, the pericardium, or combinations of these. This is undoubtedly true if one includes the myocardial irritation as evidenced by the rapid pulse. This is the reason for the prolonged rest, indicated until all evidence of acute infection or irritation of the heart muscles have subsided.

Indeed, it is suggested that in outlining the

treatment in a given case, one might compare the course of rheumatic fever with that of tuberculosis, which it resembles in its chronicity, recurrences, fever curve, pulse rate, debilitating influence, the production of anemia, and the difficulty which one experiences in declaring a patient well enough to resume his usual activities.

The active phase or acute exacerbation may be so fulminating in nature that death occurs in a few days with an acute heart. On the other hand, in the interval the symptoms may be so mild and the signs so indefinite that the condition is easily overlooked.

The incidence of rheumatic fever, even in our location, is high enough that the condition should be thought of in all children with anemia, pallor, anorexia, fatigue, failure to gain weight, failure in mental concentration, or low-grade fever, especially if associated with pains in the extremities or stiff legs or neck. By proper hygiene and supervision in the interval phase the acute manifestations may often be avoided.

The relationship of the so-called "growing pain" to rheumatic fever was recognized by Hutchison long ago and a knowledge of this is general today. So much is this so, in fact, that one should be constantly reminded that other conditions cause pain in the extremities and subject each patient with this complaint to an examination for flat foot, Hammer toe, traumatic arthritis, tuberculosis of the spine or hip, inguinal adenitis, myotonia, purpura rheumatica, etc., before deciding the pains are of rheumatic origin.

The influence of tonsillectomy on the course of rheumatic fever, while generally believed to be beneficial, is still under some dispute, and opinions based on different series of cases vary.

Kaiser, for example, says that rheumatic fever occurs twenty-five to thirty-three per cent less often in tonsillectomized children, while the incidence of carditis in rheumatic fever is not influenced by this operation.

Ash says that tonsillectomy does not influence the frequency of recurrences or of cardiac complications.

On the other hand, Aitkin cites considerable evidence that tonsillectomy lessens both the frequency of recurrences and of heart complications.

Kaiser says that the incidence of chorea is the same in children with or without tonsils, while complications in chorea are less in those who have had their tonsils out.

Aitkin does not believe that removal of the tonsils lessens the heart complications in chorea.

All agree, however, that the operation should be done only when there is no evidence of active rheumatic disease and all agree that if there is evident disease of the tonsils they should be removed.

DR. JOHN M. LEE (Nashville): Mr. President and Gentlemen of the Society: I am sorry I can't add a lot to the discussion. I want to thank Dr. Hobson for the excellent presentation.

As he stated, we don't have the opportunity to observe this condition in this part of the country that obtains in the North and East. I have often-times wondered if we don't have rheumatic infections in the numerous attacks of respiratory infections which do not show anything more than plain red throat, temperature, and the things we see with the average sore throat. I think many people who have studied the question believe that such is the case.

The question as to the advisability of taking these children to a warmer climate certainly has much in its favor. The fact that the disease is less frequent in the warmer, milder climates should be of some value in determining that question. I don't think that the possibility of recurrence or acquiring a reinfection on returning to the home climate should deprive the patients of the benefit that may be derived from a warmer atmosphere.

I want to thank Dr. Hobson for his very excellent paper.

DR. J. L. JELKS (Memphis): I am extremely interested, gentlemen, in some of the statements made by our able essayist.

These gentlemen have told you that this thing is streptococci. What strain, may I ask, of streptococci are most often found in these cases? In which strain of streptococci does the doctor find this particular rash on the body especially that undoubtedly represent upstairs infections, especially the tonsils and the teeth and the nasal sinuses, but more particularly the tonsils? Does the doctor ever try or have any of these gentlemen ever tried, to isolate definitely the strain of streptococci and make an autogenous vaccine and use that method of treating these cases?

I am interested in this subject because many years ago my ideas of the role of focal infections were then thought to be so radical, and it is so pleasing to me today to see so much attention being given to the role of focal infection in all such conditions.

DR. ALVIN BERNARD ROSENBLOOM (Jackson): There are any number of interesting angles to this and time to mention but few of outstanding importance.

One of these is that the etiology of rheumatic fever is still unproved. One of the most promising theories of its cause is that lack of sufficient vitamin C bears a relationship to this disease. Rinehart and others were able to produce lesions in experimental animals similar to Aschoff bodies by the combination of withdrawing vitamin C from their diets, and by adding infection. Neither the lack of the vitamin nor the infection alone was followed by the formation of these pathognomic lesions.

That a food factor is involved, in the cause of the disease, is supported by a number of clinical facts. Among those of importance are the following: the disease occurs where vitamin intake is

lowest and the requirements highest. This is shown by its occurrence in the winter, in poor people, and in colder climates. That this food factor might be vitamin C is suggested by the well-known hemorrhagic tendencies of patients suffering from the disease. These include gross external bleeding, as epistaxis and other forms, such as purpura, even at times, hemorrhagic nephritis, and a great number of other similar manifestations.

Vitamin C is known to be necessary for connective tissue metabolism and scurvy may be manifested by a type of arthritis which must be differentiated from rheumatic arthritis. Further, rheumatic fever is a disease of connective tissue.

Rinehart and his workers were able to show a deficiency in vitamin C in all of their cases of rheumatic fever, including one in which they were unable to raise the level of vitamin C by the injection of large amounts of the pure substance.

It is to be remembered that rheumatic fever is important chiefly because of its associated cardiac involvement.

The manifestations of the disease in children are pallor, weakness, undergrowth, and the heart lesions. In the wards of a large eastern hospital, there are an almost incredible number of children with advanced heart disease of the rheumatic type with no history of any joint manifestations at all.

It is important to remember rheumatic fever in the diagnosis of pallor, fever, and weakness in children. In other words, it is to be constantly kept in mind that the term acute rheumatic fever, as Dr. Hobson has pointed out, is quite frequently a misnomer.

DR. J. J. HOBSON (closing): Mr. President, I have nothing to add except to thank the gentlemen for their discussions.

107th Annual Meeting

HOTEL PATTEN

Chattanooga

April 9, 10, 11, 1940

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H. H. SHOULDERS, M.D., Editor and Secretary

FEBRUARY, 1940

THE ISSUE

SHALL PATIENTS AND DOCTORS RETAIN THEIR FREEDOM OF JUDGMENT IN THE MATTER OF MEDICAL CARE, OR SHALL THIS FREEDOM BE SURRENDERED TO SOME GOVERNMENTAL AGENCY?

EDITORIAL

DR. W. D. HAGGARD

It becomes the melancholy duty of the editor to comment upon the passing of Dr. W. D. Haggard.

Dr. Haggard practiced medicine and surgery for forty-six years. He was a member of organized medicine for forty-six years. He contributed much to medicine and, naturally, received much from medicine.

He entered upon the practice of medicine at a time when a transition was just in its beginning. The field of surgery in reality was just opening up. Appendicitis, as a surgical lesion, had been recognized for a relatively short period of time. It was his opportunity to make contributions to the progress which took place in the nearly half century in which he labored, and he took full advantage of it.

His contributions were so numerous that they could hardly be enumerated, much less discussed in detail. They might be classified into about three groups:

First, the contributions he made to his

patients. He contributed the best surgical judgment and skill that he could contribute at the time these services were delivered. He kept abreast of the progress which was taking place.

Secondly, he contributed to medical organizations. He served as Secretary of the Nashville Academy of Medicine. He served as President of the Tennessee State Medical Association.

He served as Secretary of the Southern Surgical Association and he served on important committees of nearly every important medical and surgical organization in this country.

He served also as President of every major medical and surgical organization in the United States. Among these are the American Medical Association; the American College of Surgeons; the Southern Surgical Association; and the Postgraduate Medical Assembly of North America.

The third contribution should be classed as civic. He was civic-minded. He made contributions to civic enterprises of his community and state. His contributions were not limited to those enterprises which related to the care of the sick. His interests and activities extended well beyond these limitations.

He gained much from medicine. He gained the pleasure and advantage which comes from broad contacts with leading men in medicine and surgery throughout the world. It is probably true that he enjoyed a speaking acquaintance and an intimate association with more men in medicine than any other man in our state.

He gained something in the way of financial remuneration, which every doctor is entitled to.

He gained much in the way of personal satisfaction derived from the sense of duty well done.

His like will not soon pass this way again.

THE NEW WAGNER BILL

(The National Hospital Act of 1940)

The bill above referred to is reproduced in full in this issue of the JOURNAL. Please refer to the index for the page.

It is substantially different from the orig-

inal Wagner Bill on this same subject introduced last year. A few of the differences are very outstanding, among these are, first, the amount of money involved; second, provisions as to expenditures; and third, the limitations which surround the expenditure.

It will be noted that the new Wagner Bill provides for the construction of hospitals in localities where a definite need is demonstrated, and, in addition, where the local community can satisfy the administration—that the institution, if constructed, can be supported locally.

Senator Edward R. Burke of Nebraska made an address before the Chicago Medical Society on December 6, 1939, on the subject: "The National Health Act." In this address he was speaking of the original Wagner Bill. The final paragraph of this address reads as follows:

"Unless the American form of government is to be gradually broken down, the United States should not tolerate a socialization of medicine or the complete assumption by the Federal Government of responsibility for the public health at the expense of the sovereignty of the states. Congress should resist the movement sponsored by the Federal bureaucracy for the broadening of its powers under the terms of the so-called, but misnamed, National Health Act."

It is encouraging to know that there are still men in the United States Senate who entertain such opinions and who act upon such convictions.

This address by Senator Burke is full of information of interest to the profession.

We are sure that a copy may be obtained by writing Senator Burke, Senate Office Building, Washington, D. C., and requesting a copy.

It is well to mention the fact that this is no time to relent in our fight. The fight must go on unremittingly against the communization of American Medicine.

It must be remembered, too, by every individual member of the Association that each individual member can exert more individual influence by his own individual effort than he can by joining with others in the adoption of some resolution.

THE NEXT STATE MEETING

Attention is called to the fact that the next meeting of the Tennessee State Medical Association takes place in Chattanooga, April 9, 10, 11. The Patten Hotel is designated as headquarters.

A committee on arrangements, headed by Dr. John B. Steele, has been appointed and is active.

A scientific program which is bigger and better than ever before is almost completed.

Please mark these dates on your calendar and make your hotel reservations.

DEATHS

DR. HILLIARD WOOD OTEY

Dr. Hilliard Wood Otey, Memphis; University of Tennessee, College of Medicine, Memphis, 1932; aged thirty-three; died December 20, 1939.

DR. CHARLES ELLIOTT RISTINE

Dr. Charles Elliott Ristine, Knoxville; University of Pennsylvania, School of Medicine, Philadelphia, 1870; aged ninety-four; died January 10 of pneumonia.

DR. W. D. HAGGARD

Dr. W. D. Haggard, Nashville; University of Tennessee, College of Medicine, 1893; aged sixty-seven; died suddenly January 28.

DR. LEWIS LOWE NEBLETT

Dr. Lewis Lowe Neblett, Clarksville; Vanderbilt University School of Medicine, Nashville, 1901; aged seventy-three; died December 25, 1939.

DR. HUGH L. PETERS

Dr. Hugh L. Peters, Knoxville; Lincoln Memorial University, Medical Department, Knoxville, 1911; aged fifty-six; died January 28.

DR. J. P. MCNEIL

Dr. J. P. McNeil, Kingsport; Vanderbilt University Medical School, Nashville, 1895; aged forty-five; died December 24, 1939.

RESOLUTIONS

DR. JAMES PERSINGER MCNEIL

Whereas God in his infinite wisdom has seen fit to remove from our midst our friend, colleague, and coworker, Dr. James Persinger McNeil; be it

Resolved, That we, representing the Sullivan-Johnson Counties Medical Society, extend to his family our esteem, love, and sympathy in their loss and bereavement. We trust that with the comfort which comes from the heavenly Father they will find consolation in their knowledge of Dr. McNeil's loyalty as a friend, of the services he rendered to his community, and of the honor and esteem accorded by all who knew him in all the relationships of life. Born at Jonesboro, Tennessee, in 1895, graduated from the Vanderbilt University School of Medicine in 1919, in general practice at Dante, Virginia, for sixteen years, he recently completed a course in cardiovascular diseases at the University of Pennsylvania Graduate School of Medicine and located in Kingsport, Tennessee, in 1938. He was a member of the Masonic Order, Kingsport Rotary Club, and the County, State, and American Medical Associations. Be it further

Resolved, That in the death of Dr. McNeil we have lost a valuable friend and citizen. His genial nature and sympathetic understanding made him an attentive listener to the problems of his fellow men, and his efforts to help them won for him a position of influence and achievement in Kingsport. Be it further

Resolved, That a copy of these resolutions be sent to the family, one to THE JOURNAL OF THE TENNESSEE STATE MEDICAL ASSOCIATION, and a copy be filed in the minutes of the Sullivan-Johnson Counties Medical Society.

THOS. MCNEER, M.D.
M. J. ADAMS, M.D.

DR. WILLIAM DAVID HAGGARD

We, the Nashville Academy of Medicine and Davidson County Medical Society, in special session assembled, this February 13,

1940, desire to pay tribute to the memory of Dr. William David Haggard, born in Nashville, Tennessee, on September 28, 1872, and to whom the final summons came on January 28, 1940.

We hereby proclaim the great scientific loss and profound grief experienced by us in the passing of this celebrated and illustrious person.

His father, Dr. William David Haggard, Sr., was a noted physician and surgeon, a pioneer in gynecology, one of the founders of the Southern Surgical Association, and its first president. He was a teacher of surgery at Vanderbilt University School of Medicine and at the University of Tennessee.

Through the veins of his mother, Jane Douglass Haggard, coursed the blood of a cultured and distinguished Southern family.

Dr. Haggard was possessed of a laudable degree of ancestral pride. He paid his parents great homage, never missing an opportunity to emphasize the high esteem and great respect with which he held his father's professional achievements.

Dr. Haggard graduated in 1893 with first honors from the Medical Department of the University of Tennessee. Thus he labored in his chosen field for forty-six years.

It may be said that medicine has made more progress in the last four or five decades than in all of its previous history. This might appropriately be referred to as the Golden Era of Medicine. To Dr. Haggard's everlasting credit, endowed with superlative intelligence, unbounded ambition and indomitable energy, he kept pace with the times, embracing every opportunity for greater service and continuous advancement.

There is an old Persian proverb: "He who learns and learns, yet does not what he knows, is like one who plows and plows, but never sows." Dr. Haggard masterfully did that which he knew.

Men are not equally gifted, nor are talents always fully developed. Endowed by nature in one of her most generous moods, he fully vindicated the faith and trust imposed.

A great physician described his vocational

achievements thus: "He was a surgeon and scientist, an investigator, especially of clinical subjects, deeply and sincerely interested in the patient as a human being and in the people as a whole."

In the United States we think of the "nobility" in terms of kings and queens and their retinue, forgetting that we have a nobility of our own. The nobility of the old countries is one of heredity and tradition; ours is one of achievement and service to mankind, which is nonetheless to be desired. To this aristocracy Dr. Haggard truly belonged. His sympathies were broad and his charity as unostentatious as it was extensive.

His versatility embraced numerous avocations. It was ordained that he should be a leader amongst men. His superior quality of mind constituted an inspiration to the lives that he touched, which extended to the utmost boundaries of the nation. Dr. Haggard typified those virtues of mind and soul which unmistakably and unerringly mark true leadership.

His confreres bestowed prodigious honors upon him with unstinted and lavish hands. He held the presidency of the Nashville Academy of Medicine and Davidson County Medical Society, Middle Tennessee Medical Association, Tennessee State Medical Association, Southern Surgical Association, Interstate Postgraduate Medical Association of North America, American College of Surgeons, and the American Medical Association. Numerous other honors were also conferred.

He was awarded the honorary degree of Doctor of Civil Laws by the University of Sewanee.

He devoted a great part of his professional life to undergraduate teaching in which he not only excelled, but in which he delighted. From his early professional life until 1911, he was professor of Gynecology and Abdominal Surgery in the Medical College of the University of Tennessee, then located in Nashville. From 1911 to his death he was professor of Clinical Surgery, Vanderbilt University School of Medicine.

He appeared before postgraduate gatherings, displaying a scintillating personality, remarkable for a singular blending of

exceptional qualities, and presented scientific subjects with marked acuity.

He contributed more than 125 original scientific essays and addresses before prominent medical organizations and gatherings in America and Europe.

He was the author of a unique and intriguing work, "Surgery, Queen of the Arts," in which he displayed fascinating literary art.

He delivered a eulogistic address on William C. Gorgas, "The Plumed Knight of Medicine," before the doctors of the Pan-American Medical Association and Congress on their Southern tour.

He was deeply interested in public health service and preventive medicine to which he constantly extended a helping hand.

He was a man of notable public spirit and civic pride. While president of the Civic Club, he achieved the widening of a portion of Church Street and the projection of Union Street, and many other improvements.

In 1926, he was awarded the Kiwanis Cup as Nashville's most valuable citizen, and as a token of love, esteem, and devotion. He continued to merit this confidence with the passing years.

He participated actively in religious affairs and held high office in his church.

On July 25, 1933, he delivered one of the principal addresses on the occasion of the fortieth anniversary of the consecration of the Rt. Rev. Thomas F. Gailor. At the conclusion of the address he presented Bishop Gailor a commendatory volume with autographs of nearly 10,000 communicants of the various parishes through the diocese of Tennessee. The volume also contained felicitations, assurances of loyalty, congratulations, and expressions of reverence and affection from the diocese.

In the World War he volunteered his services, serving first as major and later as lieutenant colonel in the medical corps. Attached to the office of the Surgeon General of the Army during his service in this country, he was one of the twelve medical advisers who served in such capacity in rotation. He was surgeon at Evacuation Hospital No. 1, Toul, France, and was also

consulting surgeon at Mesves Hospital Center, France.

He was a devoted and attentive husband, twice married—first in 1898 to Mary Laura Champe, who died in 1920; and to Lucile Holman in 1926, who died in 1932.

He loved children to an extraordinary degree, which was emphasized before he had any of his own. He had a sympathetic understanding of their ways and thoughts so that he numbered many among his friends. To his own children he displayed undying love and devotion and a beautiful spirit of comradeship.

Modern medicine utilizes every force in the world for the betterment of soul, mind, and body and is, therefore, one of the most, if not the most, powerful tendencies for human betterment.

This disciple of Aesculapius for nearly half a century lived and wrought. His stewardship is indissolubly linked with the highest achievement.

We desire to commemorate these forty-six years of heroic devotion and superior courage.

A favored child of fortune, nourished and cherished with infinite tenderness, in the twilight zone between life and death, the eternal summons came, while he was able and resigned to say:

"Earth, you have shown me all;
I am ready for the call.

"Now the laborer's task is o'er;
Now the battle day is past;
Now upon the farther shore
Lands the voyager at last.
Father, in thy gracious keeping
Leave we now our brother sleeping."

H. M. TIGERT, *Chairman,*

*Memorial Committee, Nashville Academy of
Medicine and Davidson County Medical
Society.*

MEMORIAL TO DR. WILLIAM D. HAGGARD BY THE KNOX COUNTY MEDICAL SOCIETY

Dr. William D. Haggard of Nashville, Tennessee, died January 28, 1940. Dr. Haggard was nationally known as a gentleman and surgeon. He won the highest honors in organized medicine. While obtaining his education at the University of Ten-

nessee, he made many friends among all classes in Knoxville. He was a special friend to the Knox County Medical Society, and though very busy he left his work most every year to give helpful essays to the County Society and other medical meetings which were held in Knoxville.

Therefore Be It Resolved, That the Knox County Medical Society dedicate a page in its minute book as a memorial to Dr. Haggard and that a copy of this memorial be sent his good family and a copy to our State JOURNAL.

R. G. WATERHOUSE, M.D., *President*

R. L. POPE, M.D., *Vice-President*

JESSE C. HILL, M.D., *Secretary*

Committee.

NEWS NOTES AND COMMENTS

FOUNDATION PRIZE

"The Foundation Prize" of \$150 of the American Association of Obstetricians, Gynecologists, and Abdominal Surgeons will be awarded this year.

All manuscripts must be in the hands of the secretary before June 1.

Eligible contestants shall include only interns, residents, or graduate students in obstetrics, gynecology or abdominal surgery, and physicians practicing or teaching these branches.

For full particulars, address Dr. James R. Bloss, Secretary, 418 Eleventh Street, Huntington, West Virginia.

WOMAN'S AUXILIARY

President-----Mrs. Matt Murfree
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During this time of ice, snow, and cold winds, it is hard to realize that spring is just around the corner and that April 9 is the date for our Auxiliary convention to be held in Chattanooga. We hope many will start making plans to attend, for we are

sure of a grand time in the lovely convention city of Chattanooga.

In keeping with the woman's civic forum policy of having one of the affiliated organizations to sponsor a program, the Woman's Auxiliary had charge of the January program, with Mrs. B. F. Byrd, chairman. Dr. Willis H. Thompson of Milwaukee, member of the University of Wisconsin faculty, addressed the woman's civic forum on "The Children's Charter." The speaker was introduced by Dr. John M. Lee.

DR. W. D. HAGGARD

A Florida dispatch, January 28, brought not only to Nashville and Tennessee, but throughout the realm where he was known, a sense of serious loss when Dr. W. D. Haggard, eminent physician, scholar, and author, had passed away while on vacation in a Florida city. Dr. Haggard had long been a leader in civic affairs and church movements. He possessed, in a noticeable degree, the capacity for inspiration, leadership, and wise counsel. The Auxiliary has lost a friend.

DAVIDSON COUNTY

The Woman's Auxiliary to the Nashville Academy of Medicine and Davidson County Medical Society met at the home of Mrs. Herschel Ezell on Belle Meade Boulevard. The committee assisting her included Mrs. Sidney Bullard, Mrs. B. F. Byrd, Mrs. P. C. Elliot, Mrs. Fort Bridges, Mrs. J. P. Gilbert, Mrs. J. H. Litterer, Mrs. Theodore Morford, Mrs. Bruce P'Pool, and Mrs. A. J. Sutherland, Jr.

After luncheon Dr. L. W. Edwards, chairman of the Legislative Committee of the State Medical Association, was introduced as guest speaker by Mrs. Morford, public relations chairman. Dr. Edwards' topic was "The Wagner Bill."

Mrs. R. Z. Linney announced plans for the annual birthday dinner to be held at Belle Meade Country Club on February 2.

RUTHERFORD COUNTY

"If anyone would name an author we should study with diligence and delight, it

would be Shakespeare," Mrs. Earl Roberts quoted Dr. W. H. Witt of Nashville in an interesting paper, entitled "Some Medical References in Shakespeare," before members of the Woman's Auxiliary to the Stones River Academy of Medicine on Friday afternoon at the home of Mrs. B. W. Rawlins on East Lytle Street.

Quotations from the interesting work showed the comprehensive knowledge of the great dramatist of the crude ideas of medicine practiced during the Elizabethan era, Mrs. Roberts said.

Mrs. J. B. Black, president, presided over the meeting and introduced Mrs. Roberts.

Several visitors, including wives of officials at the new Veterans Administration, were present.

At the conclusion of the meeting, Mrs. Rawlins served a salad course.

It was announced that Mrs. Matt Murfree and Miss Mary Roberts Murfree will be hostesses to the next meeting which will be held the third Friday in February.

CONVENTION PUBLICITY BULLETIN No. 1

The eighteenth annual convention of the Woman's Auxiliary to the American Medical Association will be held in New York City, June 10-14, 1940, with headquarters in the Hotel Pennsylvania. In view of the fact that the second edition of the World's Fair will accelerate advance hotel reservations, it is urged that reservations be made immediately through the Housing Bureau which has been set up by the American Medical Association—namely, Dr. Peter Irving, Room 1036, 233 Broadway, New York City.

MEDICAL SOCIETIES

Campbell County:

The January 25 meeting of the Campbell County Medical Society was postponed until today due to the inclement weather and the dangerous condition of the roads. The meeting was held in the Fox Cafe. Those present were Drs. U. S. Carden, M. L. Davis, R. L. Galaher, Joseph McCain, J. W. Presley, S. D. Queener, and R. J. Buckman.

Dr. S. D. Queener was elected to the

Board of Censors to replace Dr. U. S. Carden, whose three-year term expired.

Dr. U. S. Carden was elected delegate. Dr. J. L. Heffernan was elected alternate.

Dr. O. H. Coleman was unanimously elected to membership in the Campbell County Society on credentials, transferring him from membership in the Roane County Medical Society.

Dr. J. B. Neil, Knoxville, addressed the society on "Prostatic Resection," demonstrating his lecture with lantern slides.

(Signed) R. J. BUCKMAN, M.D.,
Secretary.

Davidson County:

January 16—"Weak Spells," by Dr. Tinsley Harrison. Discussion opened by Dr. J. O. Manier.

Case Report: "Spontaneous Fracture of Ribs in Bronchial Asthma," by Dr. Herman Spitz.

January 30—"Treatment of Ruptured Appendix," by Dr. W. A. Bryan. Discussion opened by Dr. J. P. Keller.

"Perineum and Perineal Repairs," by Dr. Richard Barr. Discussion opened by Dr. J. F. Gallagher.

February 6—"Typhus Fever," by Drs. Henry Meleney, T. V. Woodring, and C. B. Tucker. Discussion by Drs. John Overton and W. R. Cate.

Report: "A New Instrument," by Dr. Burnett Wright.

Dyer, Lake, and Crockett Counties:

The Dyer, Lake, and Crockett Counties Medical Society met February 7. Scientific program:

"Work of Health Department and Its Aid to the Physician," by Dr. W. Val Sanford, Nashville.

"Treatment of Pneumonia," by Dr. W. E. Anderson, Dyersburg.

"Empyema Following Pneumonia," by Dr. E. H. Baird, Dyersburg.

(Signed) C. L. DENTON, *Secretary.*

Gibson County:

The Gibson County Medical Society held its regular meeting January 9 at Trenton.

An interesting discussion was had and plans were made for more adequate care of

indigent tubercular cases in Gibson County during the year.

Dr. Emmett R. Hall, Memphis, delivered a splendid paper on "The Role of Allergy in Dermatology," which was very interesting.

The officers for the year 1940 are Dr. R. F. Hughes, Milan, President; Dr. J. A. Jones, Yorkville, Vice-President; Dr. F. Douglass, Dyer, Secretary-Treasurer. Delegate to the State Association, 1940, is Dr. John Jackson, Dyer. Alternate, Dr. George E. Spangler, Humboldt.

(Signed) DR. F. DOUGLASS,
Secretary-Treasurer.

Hamilton County:

January 4—Annual banquet was held.

January 11—"Acute Trauma," by Dr. H. Quigg Fletcher.

January 18—"Pitfalls in X-ray Diagnosis," by Dr. Wm. E. Chamberlain, Temple University.

January 25—"Cutaneous Manifestations of Systemic Diseases," by Dr. Clarence Shaw.

Papers scheduled to be read:

February 1—"Carcinoma of the Large Bowel," by Dr. Gene H. Kistler.

February 8—"Contact Infection," by Dr. W. E. Van Order.

"Periodic Health Examinations," by Dr. S. Fred Strain.

February 15—"Cancer of the Stomach," by Dr. J. B. Haskin.

Knox County:

January 16—"Therapeutics Resist Syphilis," by Dr. A. H. Lancaster. Discussion by Drs. Neil, Muse, Williamson, and Barry.

January 20—"Hypothyroidism," by Dr. E. M. Edington. Discussion by Drs. Dan Thomas, Long, and Roberts.

Monroe County:

The Monroe County Medical Society held its regular monthly meeting on January 9, 1940. Officers for 1940 were elected. Dr. R. M. Price, Sweetwater, President; Dr. L. L. Barnes, Sweetwater, Vice-President; Dr. T. M. Roberts, Sweetwater, Secretary-Treasurer.

In view of the notice of approval of the society's "Study of Medical Care," which appeared in the December 30, 1939, issue of the *Journal of the American Medical Association*, it was voted to have reprints of the study made for distribution.

A symposium on pneumonia therapy was given, Dr. W. G. McEvitt speaking on "Serum Therapy"; Dr. W. J. Cameron speaking on "Sulphapyridine"; Dr. Douglas Heuer speaking on "Oxygen Therapy."

Robertson County:

At the regular January meeting, held January 23, Dr. W. W. Winters read a paper on "Everyday Psychiatric Problems." Dr. R. D. Moore opened the discussion.

Members present were Drs. B. B. Sory, W. W. Winters, W. W. Porter, W. B. Dye, J. S. Hawkins, J. S. Freeman, R. D. Moore, and W. F. Fyke.

The next meeting will be held on February 20.

Sullivan-Johnson Counties:

The Sullivan-Johnson County Medical Society met in Bristol on January 3. Dr. Charles A. Young of Roanoke, Virginia, spoke on the topic "Eye Conditions in General Practice."

Dr. Young gave a very interesting talk on eye conditions commonly met by the general practitioner. He emphasized the very early treatment of internal and external strabismus and stated that very little could be done for improvement of vision after a child had reached the age of six. Early treatment of atresia, of one or both tear ducts, was mentioned. He stressed the value of removal of pterygia the instant they extended to the pupil margin and of reference to the ophthalmologist in all cases of loss of vision and symblepharons. He showed a number of pictures illustrating this and more serious conditions of the eye, and in his talk made the statement that intraocular inflammation in the patient over thirty-five in the very large percentage of cases is liable to be the result of dental infection.

A meeting of the Sullivan-Johnson Counties Medical Society was held in Kingsport on February 7 and was well attended.

Dr. W. B. Payne, Kingsport, spoke on the topic, "Diagnosis in Urology."

Officers for the year 1940 are as follows: President, Dr. F. L. Alloway, Kingsport; Vice-President, Sullivan County, Dr. William Gammon, Bristol; Vice-President, Johnson County, Dr. J. R. Butler, Mountain City; Secretary-Treasurer, Dr. C. F. N. Schram, Kingsport.

(Signed) C. F. N. SCHRAM, M.D.,
Secretary-Treasurer.

OTHER MEDICAL SOCIETIES

The annual meeting of Region II of the American Academy of Pediatrics will be held at the Edgewater Gulf Hotel at Edgewater Park, Mississippi, on March 15 and 16, 1940.

Region II of the Academy of Pediatrics comprises the southern states from Virginia to Texas and a cordial invitation is extended to any physician to attend this meeting.

The District of Columbia members of the American Academy of Pediatrics will be hosts for the annual meeting of Region I of the American Academy of Pediatrics on April 4, 5, 6, 1940, at the Mayflower Hotel, Washington, D. C.

The Southeastern Surgical Congress will hold its eleventh annual assembly in Birmingham, March 11, 12, 13, 1940, at the Tutwiler Hotel.

The completed programs will be mailed out between the fifteenth of February and the first of March. For information, write Dr. B. T. Beasley, Secretary-Treasurer, 701 Hurt Building, Atlanta, Georgia.

COMING MEETINGS

American Association of Anatomists, Louisville, Kentucky, March 20-22. Dr. E. R. Clark, Department of Anatomy, University of Pennsylvania School of Medicine, Philadelphia, secretary.

American Physiological Society, New Orleans, March 13-16. Dr. Philip Bard, Johns Hopkins Medical School, Baltimore, secretary.

American Society for Experimental Pathology, New Orleans, March 13-16. Dr. Paul R. Cannon, Department of Pathology, University of Chicago, Chicago, secretary.

American Society for Pharmacology and Experimental Therapeutics, New Orleans, March 13-16. Dr. G. Philip Grabfield, 319 Longwood Avenue, Boston, secretary.

Federation of American Societies for Experimental Biology, New Orleans, March 13-16. Dr. D. R. Hooker, 19 West Chase Street, Baltimore, secretary.

American Medical Association, New York, June 10-14, 1940. Dr. Olin West, 535 North Dearborn Street, Chicago, Illinois, secretary.

Mississippi Valley Medical Society, Hotel Fort Armstrong, Rock Island, Illinois, September 25, 26, 27, 1940. Dr. Harold Swanberg, secretary, Quincy, Illinois.

Southern Medical Association, Louisville, Kentucky, November 12-15, 1940. Mr. C. P. Loran, Empire Building, Birmingham, Alabama, secretary.

Tennessee State Medical Association, Chattanooga, April 9-11, 1940. Dr. H. H. Shoulders, 508 Doctors Building, Nashville, secretary.

The New Orleans Graduate Medical Assembly, February 26-29, 1940, Roosevelt Hotel. For information, address Secretary, 1430 Tulane Avenue, Room 105, New Orleans, Louisiana.

West Tennessee Medical and Surgical Association, Jackson, May, 1940. Dr. George R. McSwain, Paris, secretary.

Middle Tennessee Medical Association, Spring Hill, May 16, 1940. Dr. Fowler Hollabaugh, Nashville, secretary.

The Southeastern Surgical Congress, Birmingham, March 11-13, 1940, Tutwiler Hotel. Dr. B. T. Beasley, Atlanta, Georgia, secretary.

Region I of the American Academy of Pediatrics, Mayflower Hotel, Washington, D. C., April 4-6, 1940.

Region II of the American Academy of Pediatrics, Edgewater Gulf Hotel, Edgewater Park, Mississippi, March 15, 16, 1940.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By HUGH BARR, M.D.
Medical Arts Building, Nashville

Cyclopropane Anesthesia from an Allergic Standpoint. Russell F. Bonham, M.D. Current Researches in Anesthesia and Analgesia, September-October, 1939.

Patients allergic to many other things may be thrown into this state by an anesthetic. Cyclopropane, ether, and chloroform are heavier than air and cause more difficult breathing. This extra effort may precipitate an attack very similar to

asthma in those predisposed. This condition is characterized by wheezing respiration, crowing, edema of the respiratory tract, formation of mucus which is sometimes bloodstained.

This condition may continue for hours after the cessation of the anesthetic. This condition generally clears up in from six to thirty-six hours and sometimes the administration of oxygen may be demanded. The author, after encountering several of these cases, began the use of helium—seventy-nine per cent with oxygen twenty-one per cent used as a diluent—which was of great benefit to these cases. He also recommends this mixture in the treatment of bronchiectasis, tuberculosis, emphysema, etc. This mixture seems to be of more benefit in the above-named conditions than pure oxygen.

The author now uses helium whenever there are symptoms of allergy or when there is a history of previous attacks.

DERMATOLOGY

By E. E. BROWN, M.D.
Doctors Building, Nashville

Desensitization in the Treatment of Menstrual Intoxication and Other Allergic Symptoms. J. Geber. British Journal of Dermatology, June, 1939.

Among the conditions which Geber lists as manifestations of menstrual intoxication are acnelike eruptions, perifollicular dermatitis, herpes and ecchymoses, erythemas, urticaria, and bullous dermatitis. These may be accompanied by systemic symptoms. The blood serum is drawn when the symptoms are at their culmination. Its allergenic nature is proved by the method of passive transfer, but the allergenic substance has not been isolated. From forty to fifty cubic centimeters of blood is drawn, treated with .3 per cent phenol and stored. In the intermenstruum .4 cubic centimeter of the serum is injected intracutaneously every second day at widely separated symmetrical areas, and subsequent injections are made in the same areas. There may be mild local or systemic reactions. In general, there was mitigation of the symptoms even at the following menses, and a second series usually brought about full desensitization. The antigen is apparently highly specific for the individual patient, for the administration of serum from another person failed to accomplish desensitization.

OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.
Suite 234 Doctors Building, Nashville

Palliative Treatment of Dysmenorrhea. George W. Ainlay. American Journal of Obstetrics and Gynecology, Vol. 39, January, 1940, p. 82.

The treatment of dysmenorrhea of any type has been difficult especially in young women just beyond adolescence. The many medicaments are of-

ferred based on two principles—sedation and analgesia or relaxation of the smooth musculature. Sedatives and analgesics may relieve those mild cases without cramps, but leave the usual “hang-over” of mental depression. It would seem then that anything which would produce relief from pain without any aftereffects should be more than welcome. If, in addition to this, the mental depression could be lifted, much would have been accomplished. In this study a combination of five grains of acetylsalicylic acid, three grains of phenacetin, and three-fourths grains of propadrine hydrochloride was used.

There are not enough cases in this study, there being thirty-eight in number, to warrant positive conclusions. However, this much is evident: this preparation offers marked relief for the majority of women who suffer distress and depression during the menstrual period. The relief from depression both physically and mentally is often more gratifying to the patient than the relief from pain. (1) It is safe and nontoxic. (2) Its effect is almost immediate. (3) It produces no nausea or dizziness, and no aftereffect. (4) It does not depress the kidneys, nor does it influence the regularity or the amount of the menstrual flow. (5) It appears to be most effective during the first two days of the period.

OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.
Doctors Building, Nashville

Glaucoma and Ocular Tension. Considerations and Researches in a Case of Chronic Simple Glaucoma with delayed Hypertension. Francesco Casini. American Journal of Ophthalmology, December, 1939.

The patient, a woman of sixty-six years, complained of failing vision and violent pains over the eyes, sometimes accompanied by vomiting. The visual fields showed marked contraction; there was moderate excavation of the discs; the right pupil was moderately and the left decidedly dilated; and the anterior chambers were shallow. The left iris had areas of atrophy and the left vitreous was cloudy. The tension of the right eye was eighteen millimeters, that of the left eye fifteen millimeters. (Schiötz.) Intradermal injections of caffeine and of histamine produced strong positive reactions, the tension of the right eye rising to forty-four millimeters and that of the left eye to sixty-five millimeters under histamine. After each such experiment the tension was easily brought back to normal with eserine. The author reviews the literature relating to chronic simple glaucoma with delayed hypertension and to glaucoma without hypertension.

ROENTGENOLOGY

By FRANKLIN B. BOGART, M.D.
Medical Arts Building, Chattanooga

An X-ray Study of the Lungs of Workmen in the Asbestos Industry Covering a Period of Ten Years. A. W. George and R. D. Leonard. Radiology, Vol. 33, p. 196, No. 2, August, 1939.

In 1928, a large number of employees of an asbestos company were examined, and twelve cases were found who were diagnosed as asbestosis.

In 1933, all of 800 employees of this same plant were examined, and only a few cases diagnosed. Only three had what could be termed advanced X-ray findings, and none of these had symptoms. One later brought legal action after the plant was closed.

When the plant was sold and closed, ninety of the 800 employees brought legal action. Examination of this group showed twelve cases that could be diagnosed as asbestosis.

These positive cases have been followed, and contrary to the opinions expressed by some investigators, these cases have not progressed and have continued to work in other industries.

In seeking to explain the fact that blood-streaked sputum or frank hemorrhage occurs, the authors comment on the fact that in ulcers on the hands in asbestos workers, fibers of asbestos are often found embedded in the tissue. Similar fibers may lodge in the bronchi and cause ulcers.

The lung changes, as seen on the X-ray film, differ materially from those found in other forms of pneumoconiosis. Errors may commonly occur from poorly-made films. The following points are of value in differentiating between asbestosis and silicosis:

1. The increased density in asbestosis is confined to the bases; in silicosis it is primarily found in the central portion of both lungs and frequently the bases are clear.

2. The nodulation of asbestosis is the fine granular type areas; in silicosis the nodulations are coarse and in the advanced stages they become conglomerate, producing areas of apparent consolidation.

3. The pleura is more likely to be involved in asbestosis than in silicosis. The same is true of the hypertrophy of the right side of the heart in asbestosis. In our experience this heart condition is rarely seen in silicosis.

The amount of silica occurring in the asbestos may materially influence the incidence of the disease in any plant or division of the industry.

In the experience of the authors, tuberculosis has never been encountered as a complicating development in the disease.

CONCLUSIONS

1. It is our opinion that every industry with an asbestosis hazard must be a special study in itself.

All asbestos mining and manufacturing cannot be classified in one group as to the dust hazard. The percentage of silica in the asbestos dust must be taken into consideration. The method of manufacturing, whether it is the dry or wet method, is of importance.

2. We are of the opinion that the disease, asbestosis, is not a progressive disease after the individual has been removed from the dust hazard.

3. There is no evidence in our study of asbestosis for the past ten years that asbestosis has any causal relation to tuberculosis.

4. It is our opinion that the final diagnosis of asbestosis must depend mainly on the X-ray evidence, that there are no clinical findings pathognomonic of asbestosis, and that an amount of asbestos dust in the lungs, sufficient to produce symptoms, will give visible evidence of tissue changes on the X-ray film.

UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.

By G. A. WILLIAMSON, JR., M.D.

Medical Building, Knoxville

Allergic Death Due to Intravenous Use of Diodrast. Suggestions for Possible Prevention. American Medical Association. January 13, 1940.

Reactions and even deaths have been reported following the intravenous use of ordinary drugs.

Five previous cases have been reported where

the death was apparently due to the intravenous use of contrast mediums in urography.

This author reports a case of a woman, aged sixty-five, who was suffering with left renal colic. A roentgenogram of the urinary tract revealed a small shadow in the area of the lower part of the left ureter. It was decided to make urograms with intravenous diodrast. After three cubic centimeters of the diodrast solution was injected into the vein, the patient's face first became dark red and respiratory embarrassment developed as if she were choking. The face rapidly turned black. In spite of the administration of artificial respiration, oxygen and epinephrine, the patient was dead in a few minutes.

Later the information was obtained that the patient had suffered for twenty years with severe attacks of bronchial asthma. Autopsy was refused, but it was concluded that the patient was allergic to the iodides and died an anaphylactic death due to the diodrast.

Cutaneous tests are not reliable in determining sensitivity to drugs. In order to guard against a tragedy of this kind, this writer recommends the taking of a careful history of asthma or other allergic reactions, and then give the patient two cubic centimeters of the iodide medium by mouth and waiting thirty minutes before proceeding with intravenous injection. In one known case of iodide sensitivity a severe reaction occurred within three minutes after taking the solution in the mouth.

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THE MEDICAL ASPECTS OF GALL-BLADDER DISEASE*

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THE CONCEPTION of gall-bladder disease and its role in producing gastrointestinal symptoms has undergone very definite changes in the past twenty years. Prior to 1924, when Graham introduced cholecystography as a more accurate diagnostic method, the concept of gall-bladder disease was rather indefinite except for the conditions of gallstone colic, acute cholecystitis, empyema, and gangrene of the gall bladder. The introduction of cholecystography brought about several pronounced effects, and the good which it accomplished was not entirely unmixed with evil. More intensive study of the gall bladder and biliary tract was stimulated, with resulting valuable additions of knowledge to the subject and considerable light being thrown on the problem of chronic dyspepsia and indigestion. On the other hand, the wave of enthusiasm resulted in the removal of many gall bladders with questionable organic pathology, and in many instances with very little benefit to the patient. This phase was probably a justifiable period of error in the evolution of our knowledge on the subject in the light of a radical innovation. The idea that the problem of chronic indigestion had been largely solved by the ability to demonstrate abnormalities in the gall bladder, and the removal of that organ, was the basis of an understandable enthusiasm and, one might say, wishful thinking. However, in the cold light of sober

retrospection, we have been forced to change our ideas on the subject again.

This talk, being confined to the medical management of gall-bladder disease, will not consider those conditions which are strictly surgical, such as the complications of cholelithiasis, empyema, and gangrene. Rather we discuss the so-called "chronic gall bladder."

The question of treatment of chronic cholecystitis is not yet entirely agreed upon. The Mayo group is inclined to hold that all chronically diseased gall bladders, especially those which contain stones, should be removed surgically. On the other hand, reports from the Johns Hopkins group would indicate totally different ideas, since fairly recent figures from that source show complete or entirely satisfactory surgical relief of symptoms in fifty-nine per cent and wholly unsatisfactory results in forty-one per cent, and, what makes us pause for thought, a surgical mortality rate of 4.7 per cent. If, from the group of fifty-nine per cent of satisfactory cures, there were eliminated those cases of stones with colic and other advanced and unmistakably pathologic conditions, the percentage of successful results would be considerably lowered. Another writer reports forty-seven per cent failure to obtain satisfactory relief in a series of ninety "chronic gall bladders" without stones. However, the question cannot be settled by figures alone, and each patient presents an individual problem to be best solved by careful study and consideration of all aspects of the case in the light

*Read before the Cape County Medical Society, Cape Girardeau, Missouri, March 13, 1939.

of good clinical judgment and experience. This discussion is in nowise a brief for the medical treatment of gall-bladder disease versus the surgical treatment. I have passed through the phase of enthusiasm for surgical removal of gall bladders with the same disappointment that others have had, and I hope to avoid the equally erroneous reaction of considering many cases of gall-bladder disease to be medical when, in fact, they should be surgical.

On superficial consideration, it would seem that the problem is one of dealing merely with an infected organ, such as the appendix. However, the problem is more complicated than this. It was this erroneous concept that led to the enthusiasm for removing the gall bladder when an accurate diagnostic method was introduced. In the surgical conditions previously mentioned, the problem is practically the simple one of an infected organ. However, in the large group of chronic cholecystitis, the problem is more one of pathologic physiology of the entire biliary and gastrointestinal tracts than it is primarily one of disease of the gall bladder. An examination of the average "chronic gall bladder" after removal shows certain definite pathologic changes. The walls are thickened, the color is changed from the glistening green appearance to a muddy yellowish one, due to subserous deposits of fat. The mucosa presents changes varying from a simple reddish granular appearance to marked edema and swelling of the villi. In many cases there is a deposit of yellowish cholesterin crystals on the reddish granular mucosa, the appearance of which has led to the designation of "strawberry gall bladder." The organ may be dilated or considerably smaller than normal. There are varying degrees of evidence of actual inflammatory changes as shown by cellular reaction in the submucosa and muscularis. These changes are variable in degree, and from barely demonstrable pathology may progress to the point of complete fibrosis and much thickening of the wall, and even to obliteration of the cystic duct. These changes of any degree may be associated with the presence of gallstones, though it

is not unusual to see a relatively normal gall bladder containing stones, as they do not necessarily lead to inflammatory reactions.

The etiology will not be discussed at length here, as it is too controversial and, for the purpose of this discussion, irrelevant. It is commonly supposed to be an infectious process, and numerous different organisms have been reported as recovered from cultures from the gall bladder, though large numbers of "chronic gall bladders" have been proved sterile by the most careful bacteriological methods.

SYMPTOMS

The discussion of symptoms is so involved with the pathologic physiology that they will be considered together. Unfortunately, in the milder cases or those of moderate severity, the symptoms are those which may be present with any functional disturbance of the gastrointestinal tract from whatever cause, and there is nothing distinctive about them in the average case. Upper abdominal discomfort, belching, flatulence, pyrosis or "heartburn," sour eructation, sensations of bloating and distention, some nausea, and qualitative food intolerance may be present in any combination or degree. On the other hand, it is remarkable to occasionally see advanced pathologic changes in a gall bladder which may be producing no symptoms at all. The basis of these symptoms is reflex disturbance of motility of the gastrointestinal tract, with spasm and reverse peristalsis in the stomach, as can occur from any cause, whether in association with gall-bladder disease or not. When these symptoms are the result of gall-bladder disease, there is the added element of distention of the gall bladder and spasm of the sphincter of Oddi.

Since the functions of the gall bladder are those of storage and concentration of bile in the intervals between digestive phases and perhaps some regulation of pressure in the biliary tract, disease of the gall bladder alters these functions. Stasis of bile in the biliary tract is important. Several factors play a part in this, such as a low-grade hepatitis, which accompanies so many infected gall bladders, disturbance of the

emptying power of the gall bladder from inflammatory changes, and reflex spasm of the sphincter of Oddi, causing inability of the gall bladder to empty and increasing the pressure within the biliary tract. These are the factors present when there is actual infection or inflammation of the gall bladder. On the other hand, biliary stasis can be produced without actual inflammatory disease as a result of disturbances primarily in the gastrointestinal tract, particularly spasm of the duodenum from whatever cause, and which interferes with the proper emptying of the common duct into the duodenum. Some writers, Lahey in particular, have also called attention to the connection of irritability and spasm of the colon with malfunction of the gall bladder, and they stress the necessity for eliminating irritability and spasm of the gastrointestinal tract before attempting to evaluate the status of the gall bladder.

The latter factors lead to consideration of purely functional disturbances of the gall bladder, which are being more recognized and which may cause the gall-bladder syndrome in the absence of actual inflammatory disease of that organ. These disturbances have been variously called dyskinesia, atonic gall bladder, sphincteritis, etc., depending upon the individual ideas of the writer and the appearance of the gall bladder in cholecystography. It is well established, however, that the gastrointestinal spasm and biliary stasis play an important part in the production of the clinical picture of chronic gall-bladder disease. These factors account for the persistence of symptoms in so many patients after a definitely diseased gall bladder has been removed, which occurs in so many instances.

DIAGNOSIS

Intelligent treatment of gall-bladder disease must be based on an accurate diagnosis. In hardly any other medical problem does there exist such a necessity for sound clinical judgment, experience, common sense, and good diagnostic facilities if patients are to be given the best treatment. There is no standardized or routine treatment for gall-bladder disease, and the indications for

treatment depend upon the conditions existing in each individual after other factors of the case have been determined besides the existence of gall-bladder disease. Since these symptoms are merely those of disturbance of motility in the gastrointestinal tract, all of which can be caused by various other conditions, ranging from functional nervous disturbances to an actual colitis, the establishment of the existence of gall-bladder disease depends primarily upon cholecystography, which fortunately is quite accurate and shows us the size, location, and functional integrity of the gall bladder, as well as the presence or absence of stones. Unfortunately, it does not tell us whether the disturbed function in any given gall bladder is due to inflammatory changes and infection or to the other causes of disturbed biliary function and stasis. These latter require further diagnostic investigations of the gastrointestinal tract, possible constitutional diseases, the emotional and mental status of the patient, etc.

TREATMENT

There are a few general principles of treatment which apply to all types of gall-bladder disease. Because of the frequent association of a low-grade hepatitis with gall-bladder infection, an adequate amount of glucose in the diet is desirable to protect the liver against damage. By reason of the factor of stasis in all types of gall-bladder disease, a free flow of thin bile is necessary, and this can be accomplished by the use of one of the various bile salts and their derivatives. One of the most satisfactory I know is ketocholanic acid, though others, such as sodium dihydrocholate and even whole bile, are entirely satisfactory.

The treatment of gall-bladder disease being an individual problem, we should consider a treatment of the different types independently. If malfunction of the gall bladder and stasis of the biliary tract can be demonstrated by proper diagnostic methods to be due secondarily to gastrointestinal spasm, nervous and emotional disturbances or other primary contributing causes, our treatment should, of course, be directed toward these conditions rather than primarily toward the gall bladder itself.

There is a type of gall-bladder disturbance which might be called atonic, or hypotonic. The patients with this are usually obese and sedentary in their habits. Cholecystography shows a large, poorly filling gall bladder, with poor emptying power. Associated with this is hypoacidity, or a total absence of hydrochloric acid in the gastric content. The clinical picture is "biliousness," belching and bloating, poor appetite, nausea, constipation, and dull discomfort in the upper abdomen. A so-called stimulating regime is necessary for these patients, and consists in the administration of dilute hydrochloric acid and the use of ketocholanic acid or a similar substance to overcome stasis. Since the gall bladder contracts as a result of the production of a substance known as cholecystokinin, which is produced by contact with the duodenal mucosa of certain fruit juices, olive oil or oleic acid, these substances should be embodied in the diet. Such a diet should be high in fat and cholesterol, containing which are butter, egg yolk, and cream. In addition to the regular three meals a day, containing adequate quantities of these substances, intermediate feeding should be carried out with small quantities of stimulating foodstuffs. If it is not desirable that the patient eat between meals, a small amount of olive oil or a dose of ketocholanic acid can be taken between meals and at bedtime. Adequate amount of fluids, reasonable amount of exercise, the avoidance of highly seasoned foods, alcohol, etc., are also indicated.

I realize that for a long time the teachings have been that in gall-bladder disease the diet should be a "low-fat" one, with elimination of fat and cholesterol. In view of this commonly accepted diet in gall-bladder treatment, the advocacy of a high-fat, high-cholesterol diet amounts to little less than heresy. However, a low-fat diet is not based on sound physiological principles, since it deprives the patient of the natural stimulant to bile flow. The facts are that past experience shows that the majority of patients given a low-fat diet and purgatives get no relief and frequently get progressively worse until they finally drift to surgical

operation with frequently disappointing results.

Another type of gall-bladder disturbance is the hypertonic gall bladder. This is usually seen in a nervous person with a tendency to emotional upsets and worries and who has marked indigestion, heartburn, pyrosis, etc. Cholecystography shows probably a normal-sized gall bladder with fair concentration power, but slow emptying. With this is associated an increase in the acidity of the gastric content, and other examinations will show marked irritability and spasm of the entire gastrointestinal tract, particularly the duodenum. This requires sedative treatment rather than the stimulating treatment as in the preceding group. There should be frequent feedings, more or less as used in ulcer regime, but the fat and cholesterol content should not be as high. Also the use of stimulants, such as oleic acid or olive oil, are not desirable. Neutralization of excess gastric acidity by proper measures, such as calcium carbonate, magnesia, etc., are indicated, as are the use of antispasmodics, as atropine, and some of the synthetic chemicals, such as syntropan. This type of patient is more inclined to have colic and more severe pain than the hypotonic type. As in the hypotonic type, adequate amounts of fluid, elimination of highly seasoned foods, alcohol, etc., are equally as important. The use of a mild sedative at times is desirable.

Some measures of treatment which have been used in gall-bladder disease require separate discussion. For sometime the so-called "medical drainage" of the gall bladder was quite popular, and it is still used by a few men. Such a term is misleading, since the procedure is merely one of duodenal aspiration and the tube through which aspiration is done bears no anatomic relation whatever to the gall bladder. If the gall bladder should empty through the common duct into the duodenum at the time the tube is there, and the bile be aspirated through the tube, it might be said that the gall bladder has been "drained." I cannot see any rational physiological basis for the use of this procedure, since all it could possibly accomplish is the application of some

solution to the duodenal mucosa and the shunting of a small fraction of the day's output of bile to the outside through the tube, rather than its normal passage through the intestinal tract. I have never been able to obtain an adequate explanation of any possible beneficial results that this might accomplish. It is true that the instillation of magnesium sulphate and sodium phosphate through the tube of the duodenal mucosa produces a relaxation of the sphincter of Oddi and a reflex contraction of the gall bladder, but why this is any different from the same effect produced by the same substances after passage through the stomach, I have been unable to learn. Theoretically, it has been advanced that the procedure prevents infected bile from passing into the intestine, where it is reabsorbed and carried back to the biliary tract. In theory, of course, this is sound, and if the entire twenty-four-hour quantity of bile could be so diverted from the intestinal tract, it might be of some advantage. Practically, however, there is probably an extremely small portion of the total daily quantity of bile which can be so diverted from the intestine. In view of the time consumed, the discomfort and inconvenience to the patient, and the very doubtful practical results achieved, I do not think we are justified in using this procedure.

The use of purgatives has long been the custom in gall-bladder disease. Apparently, from practical experience, their use must produce relief in many cases of gall-bladder disease. However, it is very doubtful if the purgative effect of these substances is what gives relief, but rather the fact that magnesium sulphate and sodium phosphate have a specific effect on biliary drainage when applied to the mucosa of the duodenum. Since the irritating effects of purgatives on the intestinal tract, with resulting spasm and its influence on the biliary tract, are very undesirable, it is probable that the use of purgatives actually does more harm than good. Perhaps the use of substances mentioned in quantities too small to produce an irritating effect on the

intestines might be of some benefit, but since the same results can be achieved by more physiological measures, we are probably justified in not using purgatives at all. Since laxatives and purgatives are one of the great American curses and are used indiscriminately in all conditions, it is probable that many patients have the gall-bladder syndrome as a result of the irritation and spasticity of the gastrointestinal tract from purgatives rather than from any primary gall-bladder disease. I have personally seen many such patients relieved of their symptoms by the cessation of purgatives alone.

I think that clinical experience and experimental results have entirely discredited the use of so-called "antiseptics," such as salicylates, methenamine, etc., and they do not deserve further discussion here.

SUMMARY

The intelligent treatment of gall-bladder disease must be, as in most other conditions, an individual problem based on the particular factors and conditions present in each individual case. These factors must be determined by careful diagnostic study of the entire patient, instead of merely establishing the existence of gall-bladder disease or dysfunction. The principles of satisfactory treatment involve the use of physiologic measures to correct disturbed physiologic processes, and no treatment or any part of the treatment can be standardized as routine. The selection of patients for medical treatment depends upon good clinical judgment and careful diagnostic study, and this group responds more satisfactorily to medical management than to surgical removal, the results of which have proved disappointing in many large series of cases. On the other hand, there is a group of patients in whom the indications are primarily surgical, and, briefly, they may be said to consist of the complications of chronic gall-bladder disease, particularly with stones, and of unusually severe symptoms which are not satisfactorily controlled by medical management.

A TRIBUTE TO DR. W. D. HAGGARD*

W. S. LEATHERS, M.D., Nashville

I AM GLAD to pay tribute to Dr. William D. Haggard, whose death has caused a deep sense of loss among colleagues, friends, and members of his profession. It is a privilege for me to make some comments concerning the beneficent service he rendered during forty-six years' practice of medicine. Much could be said about the splendid contributions which he made to society, first as a citizen and as a skillful surgeon, as a wise and able leader, as a student of medical education, as an inspiring teacher, and as an influential churchman; but I wish to speak especially about his influence and keen insight as an advocate of the preventive and public health aspects of medical service. This phase of medicine was a part of his professional creed. He was truly a disciple of Hygeia. On many occasions have I seen him direct his remarks in an impelling way upon the needless waste of preventable illness and the great benefits to be derived from the creation and extension of efficient health services. This was done not only to the lay public, but also to groups of physicians.

It was my responsibility to serve as a delegate of the Section on Preventive and Industrial Medicine and Public Health in the House of Delegates of the American Medical Association when Dr. Haggard was chosen president-elect. This was in June, 1924. He then made a short but inspiring acceptance speech, enunciating his great belief in the possibilities of preventive as well as curative medicine. He said: "Prevention runs a thread of gold through the fabric of medicine." Indeed, the prevention of disease and the promotion of health became his cherished theme as president of this great medical organization.

Dr. Haggard, in an effective and lucid way, set forth in his presidential address on "The Romance of Medicine" the impor-

ance of having a thorough physical examination on one's birthday. Thus he originated this activating concept which we hear so frequently. He pointed out forcefully that this practice would result in raising the level of one's physical well-being in prolonging life, and in increasing human happiness. We know that a "periodic health examination" has become an accepted educational policy of the medical profession and a slogan of physicians and health agencies.

Dr. Haggard published more than 150 papers during his professional career. Some of these were of purely literary and cultural significance and others of much scientific and technical value. Beginning with 1908, one or more papers were published each year. Thus, he exemplified the "virtue of method" which was a cardinal principle of his life.

Among these publications there were constructive discussions bearing upon public health. His illuminating address as president of the Tennessee Medical Association in 1914 was on "Present-Day Problems of the Medical Profession." Another paper was on "Some of the Newer Phases of the Cancer Problem," which he considered largely from the preventive viewpoint. The latter address was given as the annual oration before the Southern Medical Association in 1921 at Louisville. In April, 1926, he spoke before the Louisiana Medical Society on "How to Add Years to Life and Life to Years," in which he accentuated the intrinsic value of adding to the average span of human life and making the lives of people, individually and collectively, happier and more wholesome.

In the address which Dr. Haggard delivered, as president, before the Tennessee Medical Association in 1914, he discussed some new frontiers in the development of public health in this country. He was in the forefront among physicians in his advocacy and understanding of needed im-

*A tribute delivered at the memorial services arranged by the Nashville Academy of Medicine, February 13, 1940.

provements in the upbuilding of a modern public health system. There are four very significant paragraphs in this paper. To quote: "Speaking specifically of our work in Tennessee, I wish to urge the entire medical profession to get behind our State Board of Health and foster in every way its activities; to increase its usefulness; and to augment its benefactions is one of our most urgent problems." Then he further stated: "As much of the county health work as pertains principally to the county should be left in the hands of the county under the supervision of a county board of health. There is no reason for creating a health district when the county may very well, and possibly better, serve as a unit in health government. The State Department of Health should use all the influence that it can command to encourage the counties to make their health services efficient. The principal step in this direction that the county can take is to employ a physician to give his whole time to the health work of the county." It is remarkable that at this early date, which is the beginning of the development of modern public health, he advocated that: "The State Board of Health should have, if possible, a special bureau or division, whose function will be to initiate, organize, and correlate county health work, directing its energies mainly to securing counties with whole-time health officers." And then in the concluding paragraph he envisaged the future development of public health: "When these and other problems are solved, as they must and will assuredly be, the medical profession will have done a great service to humanity. Every physician, no matter how engrossed with the exacting care of those entrusting their lives and health to him, must not fail to interest himself in the larger community interests that relate to the prevention of disease and the wholesome saving of human life."

While president of the American Medical Association, he made an address in November, 1929, before the general session of the Southern Medical Association in Dallas, Texas, on the subject, "What Price

Health?" Well do I remember being asked to read his manuscript and to make such revisions as seemed desirable. He cheerfully said: "I am no sage. I wish I knew more." This was a stimulating and statesmanlike discussion in which he emphasized the desirability of physicians assuming leadership in the development of public health services and urged them to support the extension of efficient state and local health agencies. He expressed progressive viewpoints and, although a busy surgeon, he found time to become informed about some of the important trends in public health. Many health officials present commented favorably upon his remarks and were encouraged because of the added strength which he gave to this cause.

These papers are mentioned especially to emphasize the central theme of these comments—that Dr. Haggard was a consistent and strong advocate of public health work and the employment of well-prepared, full-time personnel in state and local health departments. He was always deeply interested in the person who was to be chosen health officer of an important governmental jurisdiction and in the maintenance of an efficient health service.

Dr. Haggard was an upstanding citizen, a masterly surgeon, a congenial spirit, and a friend of man. He possessed the human touch in an unusual degree. His life's philosophy may be somewhat envisioned by quotations which he gave in beginning and concluding a notable address delivered at the University of Toronto in 1934 on "The Seeds of Time." This was a discussion of the genesis of chronic disease, but it had a decided philosophical slant. He began his address by quoting from Macbeth:

If you can look into the seeds of time, and say which grain will grow and which will not, speak then to me.

After giving many literary quotations to illumine his brilliant discourse, he stated in closing: "So live that when thy eternal summons comes, be able and resigned to say:

"Earth, you have shown me all;
I am ready for the call."

—*Drinkwater's Nunc Dimittis.*

MANIFESTATIONS OF ALLERGY OTHER THAN ASTHMA*

ALFRED M. GOLTMAN, M.D., F.A.C.P., Memphis

IN ORDER to discuss the various manifestations of allergic disease from a clinical as well as practical point of view, it is necessary for us to understand what we mean by the term "allergy" and the relationship of allergy to other disease entities of a similar nature.

Allergy may be defined as a condition of unusual or exaggerated specific susceptibility to a substance which is harmless in similar amounts for the majority of members of the same species.

I am fully aware of the various differences which are said to exist between allergy, anaphylaxis, and hypersensitiveness. On careful consideration of these minor differences one can readily see that they only serve to confuse us rather than help us in our interpretation of the clinical manifestations of this group of diseases and their practical application in the field of internal medicine.

Kolmer's classification of allergic phenomena, in my opinion, is most practical and serves us, at least, as a starting point in our interpretation of these phenomena.

ALLERGY

Hypersensitiveness

1. Natural
 2. Acquired
- (Exciting substances—nonprotein)

Anaphylaxis

1. Natural
 2. Acquired
- (Exciting substances—protein or protein derivation)

The manifestations or symptoms of "human allergy" are just as protean in nature as the symptoms of typhoid fever. These symptoms in man are dependent on the location of certain body cells which have been sensitized to a specific antigen or antigens. One or several groups of cells may be sensitized in the same individual and therefore one or several groups of symptoms may occur in the same individual and all can be due to the same etiologic factor or factors.

Allergy consists of a group of diseases which are a part and parcel of the field of

internal medicine. As such they often tax the ingenuity of the keenest internist. Just because in bygone days some workers in this field have caused the mechanism of this group of diseases to be considered rather complex, still this is no reason for us as conscientious physicians to cast them aside, shroud them in mystery, and allow them to be exploited by so-called racketeers.

With the foregoing paragraphs in mind, let us now consider the manifestations of some of the commoner allergic affections.

1. Hay fever is an allergic disease seasonal in occurrence, characterized by sneezing, watery nasal discharge, nasal blocking, itching of the eyes, nose, nasopharynx, pharynx and soft palate, conjunctival congestion and tearing. Quite often there is loss of the senses of taste and smell, and in severe cases there are evidences of toxemia such as general malaise and even exhaustion due probably to pollen absorption and the general effects of the morbid physiology of the disease.

Every sufferer with seasonal hay fever has the above-mentioned symptoms in varying degrees of severity and each patient may have one or more symptoms predominating. Thus nasal blocking is more pronounced in some, while watery discharge and itching are more dominant in others.

About two per cent of the population of the United States suffer from seasonal hay fever. In spite of the fact that this enormous number of people are afflicted each year with this disease as well as its complications, many of us are prone to consider it as trivial and as something which must be endured by the patient with very little effort being made to relieve the sufferer.

The importance of this disease from the standpoint of suffering and its complications should never be underestimated by the physician. In many instances symptoms are of such severity that the patient is incapacitated for weeks at a time and thus it should be considered from an economic standpoint.

*Read before the Tennessee State Medical Association, Jackson, April 11, 12, 13, 1939.

More important are its complications, the most frequent of which are:

- (1) Bronchitis.
- (2) Asthma.
- (3) Sinus infection.

While hay fever as such is usually seasonal in character, its complications at times become chronic and in so doing produce a persistent pathological state which should never have occurred. For example, two years ago I saw a young man who had ragweed hay fever which had gone untreated. At the height of the season he developed a bronchitis. The bronchitis was followed by a bronchial block with secondary abscess formation. It took him months to get well.

Another man twenty-six years old had spring hay fever. He developed asthma which persisted. After having asthma almost constantly for two years I saw him in consultation. At this time he not only had asthma, but a hypertrophic emphysema as well, which completely incapacitated him and finally caused his death a few months later.

I have had the privilege of studying many cases of seasonal hay fever extending over a period of approximately thirteen years. In this series of cases forty-seven per cent were complicated by asthma and thirty-one per cent by sinus infection. These facts alone furnish me with sufficient evidence to consider seasonal hay fever in a serious vein and teach me that I must treat the disease not only from the standpoint of alleviation of its symptoms, but that I must bend every effort to prevent its complications if possible.

2. Perennial hay fever is a nasal condition which, as its name implies, persists throughout the year. It is also known by the terms allergic coryza, atopic coryza, vasomotor rhinitis, and hyperesthetic rhinitis.

The symptoms of this type of hay fever are essentially the same as in the seasonal type, still it differs from seasonal hay fever in some respects. It is nonseasonal in character though some cases have a tendency toward seasonal exacerbations. For instance, many of these patients are quite sen-

sitive to cold which causes an aggravation of their symptoms in the winter months. Eye symptoms are usually absent or are much less pronounced than in seasonal cases. Itching of the nose is less severe or is entirely absent, but nasal blocking alternating with watery nasal discharge in uncomplicated cases are usually the dominant symptoms. While an individual suffering with this type of hay fever may be allergic, still in many cases the etiology involves other causative factors such as mechanical and chemical irritation, infection which may be local or in distant parts of the body, temperature changes and endocrine disturbances. It is usually in this type of case that the allergic factor is often missed, much to the detriment of the patient's state of health.

The complications in this condition are the same as in seasonal hay fever, but the treatment is usually more diversified due to the many factors which may be productive of or aggravate the symptoms of the disease.

3. Urticaria and angioneurotic edema. Urticaria is a skin disorder characterized by solitary or multiple swellings involving the superficial layers of the skin consisting of a pale central area or wheal surrounded by an area of erythema and accompanied in most instances by burning and itching. The lesions may be quite small, at times being hardly larger than a pinhead, and again they may cover an area of the skin as large as the palm of one's hand.

Angioneurotic edema is quite similar to urticaria, but there are some differences between the two conditions which are worth mentioning. In angioneurotic edema the lesions are larger as a rule, there is less redness, the sites of predilection are usually the eyelids, lips, tongue, the hands and feet. The swelling involves the deeper layers of the corium and the subcutaneous tissues as well. It is usually not red and burns or stings rather than itches. They are usually localized to one site during the course of an attack, while in urticaria the lesions tend to change from one site to another. The mucous membranes of the larynx and pharynx at times are the site of lesions in angio-

neurotic edema and serve as a source of great discomfort to the patient as well as anxiety for the physician.

The diagnosis of these conditions is usually quite evident and presents as a rule no unusual difficulty to the physician. Our interest in them lies in their elusive etiology and therefore varied methods employed for relief. There is no unanimous opinion as to their etiology, yet I feel certain that in most instances several factors are present as causative agents. In a series of 150 cases allergy was the sole etiologic factor in twenty per cent, allergy combined with other factors in forty-two per cent, and in thirty-eight per cent of the cases in this series no allergic factor was found. Other factors which are found quite often as causative agents are:

(1) Foci of infection wherever it may be found.

(2) Upper intestinal toxemia. By this I do not mean a food sensitivity, but a definite generalized toxemia as a direct result of upper intestinal stasis.

(3) Intestinal parasitosis (may or may not be allergic).

(4) Toxic and occurring during the course of other diseases such as typhoid fever, rheumatic fever, gall-bladder disease, and chronic constipation.

(5) Nervous and psychic factors. At times it is difficult to decide whether these factors are the sole cause of the condition or whether they simply serve to aggravate an urticaria caused by other factors. Only by careful study of the patient and careful history taking can a final conclusion be drawn as to etiology.

At the present time I question the soundness of placing this group of diseases commonly known as the dermatoses in the realm of any one specialty such as allergy or even dermatology. Due to the excessive allergic ballyhoo which has been given these diseases in the past decade the physician has a great tendency to think of them only from an allergic standpoint and desires them to be studied by allergic methods only. If relief is not afforded by this method then allergy is thrown into disrepute by the patient as well as the physician. Allergy and

allergic methods have a definite place in the relief of the dermatoses, but at the same time it would be well for us to use better judgment and not try to solve this problem from any one medical viewpoint. If we do our results will be better, our patients will be afforded more prompt and lasting relief and therefore will be better satisfied.

4. Migraine is another disease which may be classed as allergic, but the physician must always be cognizant of the fact that other causes may be present, and be quite potent in the production of the patient's symptoms.

In a series of 282 cases, sixty-one per cent were found to be allergic and this factor was found to be dominant in its etiology. In seventeen per cent allergy was a factor combined with some endocrine disturbance. In twenty-two per cent no allergic factors could be found, yet this group of patients had symptoms similar to those found to be allergic. While an allergic factor could be present and not identified as such still I am inclined to believe that other causes produced a clinical condition similar to allergic migraine.

There has been a lapse of seven years since my first attempt to classify migraine from a practical clinical and therapeutic standpoint. After further study on an increasing number of patients I am still of the same opinion. It may be classified as:

(1) Allergic.

(2) Endocrine.

(3) Allergic and endocrine combined.

(4) Miscellaneous (due to all other causes).

This disease has a very definite pathology or mechanism which is as follows:

(1) At first there is a vasoconstriction of the peripheral vascular system as well as that of the brain.

(2) There is a secondary vascular dilatation with resultant edema or hiving of the brain. This may be localized or general.

(3) There is a hypersecretion of cerebrospinal fluid with hyperabsorption occurring simultaneously.

The clinical manifestations of migraine consist of:

(1) Headache usually hemicranial in character and preceded by an aura. The

pain starts as a rule in the region of one eye or the temple and gradually covers the head on one side.

(2) An aura precedes the headache in about seventy-five per cent of cases, and consists of various motor and sensory phenomena such as scotoma, disturbed senses of taste and smell, hemiopia, muscular weakness, a feeling of exceptional well-being, frequent urination, numbness and tingling of the extremities, etc. The aura usually occurs at the time of vasoconstriction and is probably secondary to a temporary ischemia of the brain or parts of the brain.

(3) At the height of the headache nausea and vomiting ensues, causing great distress to the patient by aggravating the headache.

(4) The symptoms gradually subside over a period of twelve to seventy-two hours, following which the patient goes into a deep sleep, probably from exhaustion.

(5) The attacks are paroxysmal in character. The interval between attacks seems to become less until finally the one afflicted may have several attacks each month. The majority of our patients have not been able to wear out the disease, but on the other hand the reverse has been true in that the disease seems to wear out the patient. The age-added advice that the attacks will cease after the climacteric or after the age of fifty or sixty has not been borne out by our experience. Such advice is not very comforting, especially to a young adult. It should not be given, for it is erroneous and is not so in the majority of those so afflicted.

Briefly we may say that migraine is a disease involving the body as a whole, chiefly the brain and autonomic nervous system. Its clinical manifestations are dependent on the extent of the lesion in the brain, said lesion probably being in proportion to the degree of vasomotor disturbance. Its relief depends on careful study of each individual sufferer from the standpoint of general medicine rather than from the standpoint of any one specialty.

In conclusion, allow me to say that allergy as a disease entity is with us to stay in spite of considerable opposition on the part of

some physicians. If this be so, let us look upon this group of diseases as a part of medicine which must be conjured with at all times if good medicine, as we know it at the present time, is to be practiced.

DISCUSSION

DR. JOHN P. HENRY (Memphis): Dr. Goltman has presented a very sound and sensible paper, and I quite agree with what he has said. However, he made no mention of various allergic conditions involving the gastrointestinal tract which are as common as those of the respiratory tract. It can be said that any portion of the gastrointestinal tract from lips to rectum may be involved, and in teaching this subject to medical students, the following conditions are mentioned which may be allergic:

1. Swelling of lips or herpes labialis.
2. Swelling of the tongue and ulcers of the mouth or so-called canker sores.
3. "Indigestion" (for lack of a better term) characterized by symptoms resembling in every respect chronic cholecystitis without stones and due to liver involvement. I believe that the symptoms of the two conditions are more or less the same because in each case there is impaired liver function. In chronic cholecystitis this may be due to a diseased gall bladder, whereas in the allergic type, the gall bladder may be perfectly normal and the symptoms due to edema of the liver cells.
4. Gastrointestinal edema or so-called intestinal urticaria which at times may warrant exploratory laparotomy.
5. Spastic colon with pain and constipation, or
6. Diarrhea or mucous colitis.
7. Colic, nausea, or cyclic vomiting.
8. Poor or "finicky" appetite and inability to gain weight.

All of the above conditions are encountered in our daily practice, and I would like to discuss briefly two of them:

First, in regard to the last-mentioned condition, namely, poor or "finicky" appetite and inability to gain weight. A good many of the allergic children whom we see with hay fever or asthma also have gastrointestinal involvement. The parents, particularly the mother, are invariably as concerned about this inability to gain weight as they are about hay fever, asthma or whatever the chief complaint may be. The most logical explanation seems that these children are allergic to certain foods which in some way upset the gastrointestinal tract, thereby decreasing the appetite and with it all they fail to gain like normal or nonallergic children. Many of them, however, regain their appetites and ability to gain weight after certain offending foods have been removed.

Secondly, is the problem of the patient who presents symptoms that may be due to either chronic cholecystitis or an allergic condition. When vari-

ous laboratory aids, including X-ray, fail to reveal any definite information and if there is a history of another allergic condition or allergy among the ancestors, it seems only sensible to investigate along allergic lines. If these findings are positive, certainly the patient should be given the benefit of a trial diet for two or three weeks before resorting to surgery. In many cases, if this is not done, we have on our hands a patient complaining of the same symptoms after operation as before.

CLARENCE S. THOMAS, M.D. (Nashville): When one realizes that the essential pathology of allergy is simply contraction of smooth muscle, vasoconstriction and dilatation with increased vascular permeability, then if one remembers that no body tissue is totally exempt from being a shock organ for this type of reaction, one realizes just how far Dr. Goltman has fallen short of covering the subject suggested by his title.

The following admittedly incomplete list of clinical manifestations, which at times have allergy as their basic etiologic factor, demonstrates the impossibility of fully discussing the subject in the allotted time.

Nasal Mucosa	G. U. Tract
Hay Fever	G. U. Irritation
Vasomotor Rhinitis	Locomotor System
Bronchi	Serum Sickness
Asthma	Intermittent Hydro-
Asthmatic Bronchitis	Arthrosis
Skin	Neurological
Eczema	Migraine
Urticaria	Epilepsy
G. I. Tract	Meniere's Syndrome
Acute Gastroenteritis	Ophthalmological
Mucous Colitis	Conjunctivitis
Pain Localized or	Corneal Ulcers
General	Retinitis
Spastic Constipation	Vascular
Cyclic Vomiting	Purpura

When, as I have shown, at least seven per cent of all patients seen in the general medical clinic at Vanderbilt have allergic symptoms necessitating management, it is obvious that a knowledge of allergy must be a part of the armamentarium of every practitioner of medicine, regardless of his specialty.

Dr. Goltman should be thanked for emphasizing the necessity of considering the patient as an integrated organism, not merely specializing in the reaction to a few allergens without consideration of the secondary bacterial, intoxication, endocrine, mechanical, physical, psychic, and climatic factors which play a large role in symptomatology. These must be corrected as well as any other pathology before adequate relief is obtained.

Another point made by Dr. Goltman will bear repetition—that is the desirability of treating the

first manifestations of allergy as a prophylactic measure against the graver manifestations and the debilitating complications. Not only is this true, but it is well to recognize the allergic individual early and help him to avoid occupational and other hazards leading to possible future trouble.

A number of the conditions listed above as migraine and Meniere's syndrome, in my opinion, are to be considered as merely symptom complexes, not pathological entities. To describe one mechanism for migraine and say nothing of other possibilities is, to say the least, hazardous. There are numerous other theories as to the mechanism of migrainous seizures, a number of which are not without experimental backing, and this symptom complex in the nonallergic group at least may have another pathology than that described. The essayist has been indeed fortunate in his experience with migraine. My experience, and that of most authors reporting on the subject, has been that nearer fifty per cent than seventy-eight per cent of the migraine patients seen have correctable allergic and endocrine factors as the cause of their trouble.

May I thank Dr. Goltman for a very forceful, rational, and practical consideration of a subject which I believe should be practiced as a part of internal medicine and considered routinely in the differential diagnosis of patients presenting any of the symptoms listed above.

DR. N. GOTTEN (Memphis): Dr. Goltman branched off on the subject of allergy and left out one cause which I think is most important, and that is the psychogenic cause. It was mentioned by the last discussor that psychogenic causes are certainly very prominent in a migrainous condition, and I have one patient that I can always cure in a few hours. I can cure her if I can get her mother-in-law out of town.

DR. ALFRED M. GOLTMAN (closing): I want to thank the gentlemen for their kind discussion of my paper.

It is impossible to discuss every manifestation of allergic disease in the time allotted me. Therefore I could only consider a few allergic manifestations and discuss them briefly. I might add that Dr. Gotten's case of mother-in-law headache is not so unusual, as we probably all fully realize that mother-in-laws are frequently the cause of headache in one way or another.

There have been many theories propounded as to the mechanism of migraine, still these are only hypotheses. The mechanism of migraine, as I have given it to you, is from personal observation; it confirms some hypotheses which have been expressed before and rejects others.

In coming to my conclusions, I have tried to be unbiased and leave my conception of the mechanism of migraine with you for what it is worth.

A TEN-YEAR REVIEW OF LOCAL OBSTETRICS*

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A SUMMARY of our local obstetric experience for the past ten years shows interesting changes of various natures. Our results are better now in several respects, and it will be advisable to consider our local data in its proper setting with respect to the progressive improvement in mortality rates throughout the country. Scott Runnels has shown in his comprehensive "An Obstetric Audit" that a large portion of the criticism of the lay and professional press of recent years was not only unjustified, but actually misleading. He points out that numerous forces have been steadily at work improving our national obstetric mortality rate since 1920, that this improvement has been accelerated in recent years, and is considerably in excess of the improvement in the general mortality rates. A table of the birth rates, maternal death rates, and stillbirth rates of the four large cities of our state for the past ten years shows this trend quite distinctly. Before entering into a detailed discussion of these rates, we should remember that the white birth rate is higher, the white maternal death rate is lower, and the white stillbirth rate is lower than the corresponding colored rates. We should also remember that Knoxville has 16.2 per cent colored population, Chattanooga and Nashville both have 27.8 per cent, and Memphis has a 38.2 per cent colored population. These facts account for some of the variations in rates between these cities each year. Furthermore, we should not neglect to evaluate the presence and influence of the fine medical schools in Nashville and Memphis.

This first chart shows variations in the birth rate, apparently resulting from the recent economic stresses, averaging for the four cities from 21.8 per thousand population in 1929 to a low of 17.1 in 1933, then increasing gradually to 19.4 for 1938. It also shows that Nashville has an apprecia-

bly higher birth rate each year than the other three cities. This may be due to greater basic stability of its population that has been noticed by those who are well acquainted with all four cities. Memphis has the lowest birth rate over this ten-year period, which probably is one of the results of its high percentage of negroes. The maternal death rate, averaging the four cities

BIRTH RATES, MATERNAL DEATH RATES, AND STILLBIRTH RATES FOR CHATTANOOGA, KNOXVILLE, MEMPHIS, AND NASHVILLE, TENNESSEE, 1929 THROUGH 1938

Year	Chattanooga		Knoxville		Memphis		Nashville		Four Cities
	Recorded	Resident	Recorded	Resident	Recorded	Resident	Recorded	Resident	
1929 Birth rate**	22.1		21.7		21.2		22.3		21.8
Maternal death rate*	9.9		10.2		14.8		15.2		13.2
Stillbirth rate*	83.4		44.8		60.9		59.5		61.4
1930 Birth rate	19.3		22.8		19.4		22.6		20.7
Maternal death rate	12.1		9.5		11.4		11.1		11.2
Stillbirth rate	84.3		52.0		56.5		61.6		61.9
1931 Birth rate	17.5		18.9		18.4		21.7		19.1
Maternal death rate	8.0		13.1		11.4		10.7		10.9
Stillbirth rate	68.7		55.2		50.7		65.6		58.7
1932 Birth rate	18.1		19.3		17.7		21.7		18.9
Maternal death rate	8.4		8.8		11.1		11.3		9.4
Stillbirth rate	68.3		40.4		48.2		54.2		52.1
1933 Birth rate	15.8		18.3		15.7		19.6		17.1
Maternal death rate	10.6		10.0		10.0		9.0		9.9
Stillbirth rate	82.4		39.2		51.1		46.3		53.1
1934 Birth rate	17.3 15.9		18.7 17.7		16.9 14.9		20.1 18.5		18.0
Maternal death rate	7.7 7.4		8.2 4.8		14.1 8.1		13.1 5.4		11.6
Stillbirth rate	62.8 59.0		39.6 37.0		47.3 44.1		51.1 46.4		49.7
1935 Birth rate	17.3 15.5		17.7 16.2		16.8 14.4		20.7 18.7		17.9
Maternal death rate	13.8 11.9		9.4 7.2		15.1 9.5		10.2 4.7		12.5
Stillbirth rate	62.7 60.6		42.2 40.2		47.2 43.4		50.2 46.0		49.9
1936 Birth rate	17.3 15.3		17.9 15.6		17.3 14.5		20.9 18.2		18.2
Maternal death rate	9.6 7.9		10.0 7.3		12.3 7.9		5.3 3.7		9.6
Stillbirth rate	51.2 48.6		40.0 38.6		44.1 38.8		48.3 49.3		45.8
1937 Birth rate	18.0 15.8		17.7 15.1		18.2 14.8		21.6 17.8		18.8
Maternal death rate	11.6 9.4		10.4 8.4		11.9 8.0		7.9 4.8		10.5
Stillbirth rate	54.2 50.0		41.9 32.6		47.1 41.7		41.4 38.8		46.0
1938 Birth rate	18.9 16.0		17.7 14.7		16.5 15.5		26.4 18.2		19.4
Maternal death rate	8.2 5.1		6.6 4.1		11.2 7.1		5.7 6.0		8.2
Stillbirth rate	51.4 52.0		34.0 33.9		51.2 38.1		35.6 39.1		43.6
Ten Year Rate Birth rate—Total	18.1		19.0		17.7		21.7		19.0
White	19.6		20.3		17.5		22.9		19.8
Colored	14.1		12.1		18.0		18.8		17.0
Maternal death rate—Total	10.2		9.6		11.7		9.2		10.4
White	8.8		9.4		10.0		7.8		9.0
Colored	14.9		11.6		14.3		13.5		14.0
Stillbirth rate—Total	66.4		42.9		50.4		51.0		52.8
White	48.0		35.7		34.5		39.9		38.9
Colored	131.0		65.3		74.9		85.2		87.7

*Rate per 1,000 live births.

**Rate per 1,000 population.

*Read before the Chattanooga and Hamilton County Society, Chattanooga, November 23, 1939.

in proportion to population for each year, has improved just as Runnels showed it did for the country at large. The rates for each of these cities are included in his comprehensive study. Closer inspection of the maternal death rates shows that Nashville averages the best, 9.2 per thousand live births over this ten-year period, and Memphis shows the poorest results, 11.7, while between these extremes Knoxville is second with 9.6 and Chattanooga is third with 10.2. The most remarkable finding in this respect is that Nashville had a greater maternal death rate than ours for the first seven of these ten years, then reduced this rate by approximately one-half for the last three years to bring the average for the ten years to better than that of ours. Some influences probably associated with their medical school may account for this. Knoxville has the best stillbirth rate average, 42.9 per thousand live births, Chattanooga has the poorest, 66.4. This is probably an adverse reflection on the general state of health here. Fortunately, all four cities show a steady improvement in the stillbirth rate of approximately fifty per cent over this same time, which must be the result of a number of influences rather than of any single cause. Resident rates, when available, and white and colored ten-year average rates for each city complete this chart.

The second chart shows the total number of deliveries, maternal deaths, and stillbirths that have occurred in Chattanooga for the past ten years, contrasting these totals as collected by the Bureau of Vital Statistics with the work and results obtained in our two approved open city-county hospitals. The difference between these figures represents the work done and results obtained in six private sanatoria and in the private homes. These experiences follow the definite trends that have been observed elsewhere and reported in several recent authoritative articles. This chart shows that, although the total number of deliveries is not increasing materially, there is a constantly increasing fraction of the city's deliveries occurring in our two approved open hospitals. The number of maternal deaths remains about the same each year for the city at large, and averages more than twice the number that die in

COMPARISON OF TOTAL NUMBERS OF CASES AS RECORDED BY THE BUREAU OF VITAL STATISTICS* AND OPEN HOSPITAL FOR CHATTANOOGA

		Deliveries	Maternal Deaths	Stillbirths
1929	Vital statistics*.....	2,299	21	177
	Hospital records.....	557	10	49
1930	Vital statistics.....	2,508	28	195
	Hospital records.....	623	12	49
1931	Vital statistics.....	2,272	17	146
	Hospital records.....	697	8	56
1932	Vital statistics.....	2,408	19	154
	Hospital records.....	881	8	54
1933	Vital statistics.....	2,174	21	164
	Hospital records.....	1,108	13	67
1934	Vital statistics.....	2,354	17	139
	Hospital records.....	1,140	8	76
1935	Vital statistics.....	2,391	31	141
	Hospital records.....	1,094	14	57
1936	Vital statistics.....	2,403	22	117
	Hospital records.....	1,203	10	93
1937	Vital statistics.....	2,549	28	131
	Hospital records.....	1,241	17	62
1938	Vital statistics.....	2,701	21	132
	Hospital records.....	1,472	8	62

* Sum of registered live births and stillbirths.

these hospitals. Closer study of this first and second column bears out Runnels' statement that "approved hospitals are the safest possible places for delivery." The number of stillbirths, however, is generally recognized as presenting a different problem that is much more resistant to efforts aimed at its reduction. Consideration of the first and third columns of this chart shows that when one-quarter of our deliveries occurred in the approved hospitals one-quarter of our stillbirths occurred there also; when one-third of our deliveries were done in the hospitals, one-third of the stillbirths were there; and when one-half of all Chattanooga's deliveries were done in Erlanger and Children's Hospitals, one-half of all our stillbirths happened there too. Small though it is, this series of local data shows the relatively stationary number of total deliveries and maternal deaths here, as well as the increasing hospitalization for delivery, the greater maternal safety there, and lack of effect of hospitalization on the number of stillbirths. A clinic for service to that group which requires public care was started at Erlanger Hospital in January, 1932. The results of its work are included in these approved open hospital figures. Accordingly, any efforts to improve these results should be most beneficial when aimed at helping with the private sanatoria and home delivery group rather than with the public care

CHATTANOOGA CITY-COUNTY HOSPITALS SUMMARY

Total No. Deliveries	Maternal Deaths		Stillbirths		Section		Forceps		Version		Hemorrhage		Toxemia		Infection Deaths Only
	Number	Per cent	Number	Per cent	Number	Deaths	Number	Deaths	Number	Deaths	Number	Deaths	Number	Deaths	
1929—557	10	1.8	49	8.8	15	2	26	3M 3F	0		18	1	9	4	0
1930—623	12	1.9	49	7.9	8	1	20	1M 4F	3		19	3	6	2	5
1931—697	8	1.1	56	8.0	9	1	23	1M 2F	22		15	4	13	2	1
1932—881	8	0.9	54	6.1	10	0	39	2M 3F	34		23	1	13	4	5
1933—1108	13	0.9	67	6.1	24	4	42	2M 4F	22		16	3	33	3	1
1934—1140	8	0.7	76	6.6	32	1	45	1M 2F	32	1M 2F	23	1	42	3	1
1935—1094	14	1.3	57	5.3	45	4	55	0M 1F	23	0M 2F	36	4	85	3	3
1936—1203	10	0.8	93	7.7	42	0	66	2M 6F	35	0M 1F	29	0	40	3	3
1937—1241	17	1.4	62	5.0	47	4	83	0M 1F	23	0M 4F	15	1	42	9	3
1938—1474	8	0.5	62	4.9	52	1	119	2M 2F	30	0M 9F	11	1	25	2	2

group, as was shown to be the case by recent surveys in Nashville and Memphis. Difficulties encountered by any such efforts may well be due to a population classification shift here.

The third chart shows an analysis of the work done in our two open hospitals during the same ten-year period. The increasing amount of work is shown again. The maternal deaths and stillbirths are also accounted for again, and are mentioned in percentages of the total work as is customary in reporting hospital results. Most of this work has been done at Erlanger. Children's was opened in July, 1929, and accounted for only a few deliveries in that year. In 1933, Erlanger had 925 and Children's 183. In 1938, Erlanger had 1,223 and Children's 251. The maternal deaths of each year are accounted for in this chart as following operative intervention or as the result of hemorrhage, toxemia, or infection. Although the number of maternal deaths does not vary appreciably in this ten-year period, the percentage decreases as the total volume of work increases. The increasing number of stillbirths has been discussed previously. Additional data not shown in this chart, but contained in the records from which this list was compiled, shows that syphilis was responsible for approximately 16.4 per cent of all these stillbirths. There has been a considerable increase in the number of Caesarean sections recently which show an incidence of 2.8 per cent for the whole period; a mortality of fourteen per cent for the first five years, 4.6 per cent for the second five years, and a

6.3 per cent mortality for all this time. This increase in Caesarean sections is due to a general liberalizing of indications and the observation of relatively improved post-operative courses in recent years. Except for an occasional Porro, these are all classical, and not one record of the low cervical type of operation is to be found in this whole series of 284 operations. The great rise in the number of forcep deliveries in recent years is a direct result of the increasing use of heavy narcotized sedation in labor. Version and extraction apparently do not offer any popular appeal here. The hospital records unfortunately do not follow the accepted standards in sufficient detail to give accurate reports of the incidence of hemorrhage, toxemia, and infection. The numbers listed here are those in which these conditions occurred with sufficient severity to attract more than passing notice. The deaths attributed to these complications are those in which the particular condition was apparently the main cause. As was mentioned before, a clinic for the service of public-care patients was opened at Erlanger in January, 1932. Careful study of this whole chart with regard to the improvement observed all over the country and in other cities of our state shows that the only accomplishment of this clinic has been the diagnosis of a larger number of toxemias without any material benefits in the results of treatment. Multiple pregnancies occurred in a little more than one per cent of all these cases, all of which were twins. Private pay cases amounted to sixty-six per cent of this work in 1929, twenty-four per cent in 1933, and forty-five per cent in 1938.

Accordingly we see that our local results are better now in many respects. Different trends, some undesirable, are in force at present. Greater improvement must still be made, and it is hoped that this summary will orient all of us so that we may lend our efforts to this end more efficiently. A considerable amount of work and help in collecting this data has been given by Dr. E. L. Bishop and Miss Maher of the Tennessee Valley Authority; Dr. W. C. Williams, Commissioner of Public Health of Tennessee; Miss Gibbs of Erlanger; and Mrs. Estes of Children's. I wish to express my sincere appreciation for their help.

MANAGEMENT OF COMMON EYE CONDITIONS IN THE FIELD OF THE GENERAL PRACTITIONER*

EDGAR L. GRUBB, M.D., Knoxville

IT IS MY intention to discuss only the more common eye conditions for which the physician in general practice is consulted and, since capable ophthalmic surgeons are available in our larger communities, my remarks will be an attempt to supply in a concise manner some practical suggestions for the first-aid physician and those practitioners so geographically located that the immediate services of the specially trained is not to be had.

Foreign bodies, particularly those embedded in the cornea, deserve a safe routine of care with great respect for the surrounding tissue. The immediate instillation of one or two per cent butyn at two-minute intervals for three applications is ordinarily sufficient anesthesia. A spotlight, magnifying lens, plus a sharp-pointed spud, are necessary instruments. The spud is passed under the body which is rocked loose and lifted out. The use of cotton applicators or any attempt to wipe the cornea is to be condemned since great damage is done by such procedure. A route installation of 1:5000 bichloride of mercury ointment and dressing applied for twelve to twenty-four hours. Inspection the following day is a very sound practice and when excessive redness and discomfort have persisted, together with a gray area or ring about the site of the wound, it usually means infection is present and an ophthalmologist should be seen immediately, since an eye may be lost by a little procrastination. Local anesthetics other than butyn may be chosen. Holocaine is acceptable; however, cocaine is poorly tolerated by the epithelium of the cornea and is not advised for routine use.

Acute catarrhal conjunctivitis or "pink eye" characterized by the intense congestion of both the bulbar and tarsal conjunctiva and considerable mucopurulent discharge is, in this country, usually due to the pneumococcus. Koch-Weeks bacilli are occa-

sionally found. If possible a smear should be done and when positive pneumococcal infection is found, it may be eliminated by the twice daily instillation of one per cent optochin. Metaphen in dilutions from 1:2000 to 1:5000 is reasonably efficacious. Silver nitrate, one-half of one per cent, applied to the inner surface of the lids and fornices is an adjunct. Silver protein preparations, such as argyrol and neosilvol, have been widely used; however, about all one can say is that they do little harm. It has been proven that the amount of active silver in argyrol is four per cent and neosilvol two per cent. On this basis a 100 per cent argyrol solution would be no more efficient than one-half per cent solution of silver nitrate. Children of the school age should be removed from the schoolroom until the discharge disappears, and the parents advised of the contagiousness of this condition as an attempt to control the spread of this infection.

Chronic conjunctivitis is caused by several different organisms of which the Morax-Axenfeld bacillus is typical. The nonbacterial cases may be allergic, have refractive errors or some constitutional derangement. The recognition and differentiation as to the cause may require both the services of the ophthalmologist and the general practitioner. The treatment and handling of gonorrheal conjunctivitis has been purposely omitted since, in my opinion, very few internists or general practitioners would care to assume the responsibility of supervising these cases.

Blepharitis, characterized by dried exudate and scales about the roots of the eyelashes, may be improved by daily massage to the lid margins with 1:5000 merthiolate ointment, or three per cent ammoniated mercury ointment. The crusts contain the causative staphylococcus and the shedded scales invade the conjunctival sac, producing a secondary conjunctivitis. The installation of one-fourth per cent zinc sulphate

*Read before the Tennessee State Medical Association, Jackson, April 11, 12, 13, 1939.

is of value in controlling this condition. If ample recovery does not take place under such a routine further investigation to determine the causative organisms is necessary. Some are difficult to destroy. Molluscum infestation is typical of this group and requires special attention.

The hordeolum lid abscess or common "stye" is treated as an abscess anywhere by hot fomentations and incised only when the pus is at the surface. In my opinion, it is much safer to permit the abscess to open without surgical assistance than to prematurely incise and take the chance of injuring the natural protective barrier about the abscess site. The use of two per cent yellow oxide ointment to prevent the infection of other glands is indicated. This may be continued for a month or longer. Staphlogel may be used instead of the mercurial ointment and apparently it is reasonably effective. In spite of this treatment recurrences are many. Some observers think the attendant blepharospasm permits bacteria to be held in the ducts and mouths of the glands. It is my personal opinion that unconscious handling and rubbing the eyes is promoted by the irritation and this really assists in spreading the infection. Attention should be given to the general condition, particularly anemia if present. Cod-liver oil or the equivalent is recommended. An autogenous vaccine made from the pus taken from a fresh abscess should be tried in the more obstinate cases.

With the advent of the motorcar, lacerations by broken glass have greatly increased. Quite often the most important treatment rendered these cases is the first aid and it is very important that adequate and complete service be given. It is almost impossible to repair these wounds about the eyelids with the usual size needles and suture materials. Dermal and catgut sutures are too large and stiff for this purpose. Small cutting needles and twisted silk suture is most adaptable. Extreme care in securing apposition in such a manner as to reconstruct the normal anatomical position is very important. My own procedure is to begin the repair by coaptation of the lid margins, being careful to restore the con-

tinuity at the mucocutaneous margin with a well-placed anchor suture. Interrupted sutures as close as needed will produce a nice cosmetic result. In case the cornea or sclera has been penetrated 1:5000 bichloride of mercury ointment should be instilled and a dressing applied until the services of an ophthalmic surgeon can be had.

Burns of the eye from escaping steam, cigarettes, and hot metal are much less frequent than chemical burns. The minor thermic burns are quite painful, but usually heal within a week or two. The instillation of holocaine and adrenalin ointment with dressing is ordinarily ample first aid.

Damage from electric flash is usually limited to irritative changes resulting from the ultraviolet spectrum. Pronounced photophobia pain and injection of the conjunctiva, together with history of exposure, complete the diagnosis. A local anesthetic such as butyn, one per cent, often as necessary and dressing until the symptoms subside is often sufficient.

Acid burns occur most often from explosion of the hydrogen mixture in a charged battery with the attendant splashing of acid. The immediate and thorough washing with tap water is imperative. The use of alkaline solutions is condemned since, after the first few seconds, they are without value and there is a possibility of producing more damage by their use. Alkali or caustic burns are by far the worse of the lot. Liberal use of tap water, and if seen immediately, the use of diluted vinegar, may be of some value. One per cent tannic acid jelly has some merit.

In all these chemical burns, a guarded prognosis must be given, since often the eye is much worse after a week or two than immediately after the accident.

Pieces of mortar or slacked lime occasionally get under the upper lid. Thorough cleansing with tap water, eversion of the lid in search of all particles, and in severe cases a ten per cent solution of neutral potassium tartrate is efficacious.

Refrigerating gas (SO₂) burns are best treated with four per cent solution of sodium bicarbonate in glycerine seventy-five per cent and water twenty-five per cent.

Tear gas usage is so increasing that it must be considered. Those with a great experience in these cases recommend a four-tenths per cent solution of sodium sulphite in seventy-five per cent glycerine and twenty-five per cent water.

The diagnosis and treatment of iritis, acute glaucoma, and some corneal lesions, particularly in the early stages, is often difficult for the experienced observer. It is my personal opinion, based on both my experience as a general practitioner and as an ophthalmologist, that any case presenting ciliary injection, photophobia, local discomfort, and a steamy appearance to the anterior chamber of cornea should have the attention of a specialist, particularly for the establishment of diagnosis. Acute iritis may be competently handled by any physician, however, we must rule out the possibility of acute glaucoma. The patient's age can be of important diagnostic value, since glaucoma rarely occurs in individuals under fifty years of age. When indicated atropine can be rather safely prescribed in the young.

I should like to say a few words relative to the often-discussed subject—the use of the ophthalmoscope in general practice. It is important to avail ourselves of all the possible means of diagnosis and if the general practitioner can be well taught in ophthalmoscopy and have enough experience to interpret what he sees in the fundus of the eye much value can be obtained. When one considers that within the eye is the only place that the blood vascular system can be plainly observed one appreciates this barometer as to the condition of the circulation, nervous system, and certain toxic and digestive changes. However, ophthalmoscopy is not to be learned in a day and a vast amount of clinical experience is necessary to make one's opinion worth anything at

all. There is a tremendous variation in the normal and an infinite variety in the abnormal. Every ophthalmologist constantly sees mistakes made by those who have only a little knowledge of the subject, and I would urge those who wish to use the instrument to advantage to approach the subject with respect and to back their opinion by a large clinical observation.

No discussion of the visual apparatus would be complete without a consideration of "squint" or "crossed eyes." In my opinion, this is probably the most neglected condition in ophthalmology. Parents of such children frequently seek advice from the family physician. Due to the little consideration given squint in the general hospitals and medical colleges, the average physician devotes little time to them. One of the greatest services that can be rendered one of these little unfortunates is to get him under the care of a competent ophthalmologist just as soon as the first signs appear, which is ordinarily about the second year of life. Approximately eighty per cent of the little fellows have hyperopia or "far-sightedness" and many can be controlled by using appropriate correction in lenses, together with muscle training. When this treatment is inadequate surgery should be done and there is no reason for waiting for maturity. There is no mortality in this procedure, hence it is all to gain with nothing to lose. Even if the cosmetic effect is all that is obtained the operation is a grand success from an economical standpoint. The boy or girl with a marked squint is starting life with "two strikes" on them, and cannot hope to marry their equal or obtain the position their ability might deserve. Permit me to implore you to insist that every little squint case has advantage of proper treatment.

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OF THE

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H. H. SHOULDERS, M.D., Editor and Secretary

MARCH, 1940

THE ISSUE

SHALL PATIENTS AND DOCTORS RETAIN THEIR FREEDOM OF JUDGMENT IN THE MATTER OF MEDICAL CARE, OR SHALL THIS FREEDOM BE SURRENDERED TO SOME GOVERNMENTAL AGENCY?

EDITORIAL

A SUPREME COURT DECISION OF INTEREST TO THE PROFESSION

The following statement concerning a decision by the Supreme Court of the State of California is taken from the magazine, *Law Notes*, January issue, and is reproduced in the JOURNAL by the kind permission of the editor, Mr. Meldrim Thomson, Jr., 399 Gold Street, Brooklyn, New York:

Corporate Practice of Medicine

"The Pacific Health Corporation, Inc., was a corporation organized under the General Corporation Law of the State of California with its principal place of business in San Francisco. Upon application of persons in good health, the corporation issues a contract by the terms of which the corporation undertakes to pay for services rendered by physicians, hospitals, ambulance, and medical laboratories under certain circumstances, and the applicant pays a required sum or premium therefor. When a contract holder becomes sick or is injured,

the corporation advises him from whom these services are to be obtained. After the services are rendered the corporation pays the charges. The corporation keeps a list of physicians and surgeons approved by it and to obtain the benefit of the service the contract holders must, except as to emergency expenses not exceeding fifty dollars, accept a doctor from the list. The corporation is operated for profit. It advertises its service and solicits the public for purchase of its contracts, paying commissions to its soliciting agents. The money collected from contract holders is paid into the general fund, and that, together with the capital and surplus, is invested. The charges for medical services are paid out of the general fund and income from investments.

"The Supreme Court of California in the case of *People ex rel. State Board of Medical Examiners versus Pacific Health Corporation, Inc.*, 82 Pacific Reporter, Second Series, 429, held that the corporation was engaged in the illegal practice of medicine in violation of California Statutes 1937, page 1254 et seq., sections 2000-2496. The corporation contended that it did not itself undertake to perform medical services, but merely to furnish competent physicians, and that the contracts did not contemplate that services should be performed at its offices but elsewhere, and that the doctors were not employed by the corporation on a salary basis, nor directed by the corporation, but were compensated for actual services after they were rendered.

"The court, in a per curiam opinion, from which Chief Justice Waste and Justices Edmonds and Houser dissented, said: 'We are unable to agree that the policy of the law may be circumvented by technical distinctions in the manner in which the doctors are engaged, designated or compensated by the corporation. The evils of divided loyalty and impaired confidence would seem to be equally present whether the doctor received benefits from the corporation in the form of salary or fees. And freedom of choice is destroyed, and the elements of solicitation of medical business and lay control of the profession are present whenever

the corporation seeks such business from the general public and turns it over to a special group of doctors.' ”

CONCERNING THE QUESTION OF UNETHICAL PRACTICES

From the number of inquiries which reach the office bearing upon the question of unethical practices, it is obvious that many members of the medical profession do not have a clear understanding of the features of contract practice which make them unethical.

The provisions of the code are clear and need no amplification by the editor and Article VI is reproduced in full for the purpose of promoting a clear understanding of the ethical principles which must govern in the various situations which arise today.

ARTICLE VI—COMPENSATION

Limits of Gratuitous Service

Sec. 1.—The poverty of a patient and the mutual professional obligation of physicians should command the gratuitous services of a physician. But endowed institutions and organizations for mutual benefit, or for accident, sickness and life insurance, or for analogous purposes, have no claim upon physicians for unremunerated services.

Conditions of Medical Practice

Sec. 2.—It is unprofessional for a physician to dispose of his services under conditions that make it impossible to render adequate service to his patient or which interfere with reasonable competition among the physicians of a community. To do this is detrimental to the public and to the individual physician, and lowers the dignity of the profession.

Contract Practice

Sec. 3.—By the term “contract practice” as applied to medicine is meant the carrying out of an agreement between a physician or a group of physicians, as principals or agents, and a corporation, organization, political subdivision or individual, to furnish partial or full medical services to a group or class of individuals on the basis of a fee schedule, or for a salary or a fixed rate per capita.

Contract practice *per se* is not unethical. However, certain features or conditions if present make a contract unethical, among which are: (1) When there is solicitation of patients, directly or indirectly. (2) When there is underbidding to secure the contract. (3) When the compensation is inadequate to assure good medical service. (4) When there is interference with reasonable competition in a community. (5) When free choice of a physician is prevented. (6) When the conditions of employment make it impossible to render adequate service to the patients. (7) When the contract, because of any of its provisions or practical results, is contrary to sound public policy. The phrase, “free choice of physician,” as applied to contract practice, is defined to mean that degree of freedom in choosing a physician which can be exercised under usual conditions of employment between patient and physician when no third party has a valid interest or intervenes. The interjection of a third party who has a valid interest, or who intervenes does not *per se* cause a contract to be unethical. A “valid interest” is one where, by law or necessity, a third party is legally responsible either for cost of care or for indemnity. “Intervention” is the voluntary assumption of partial or full financial responsibility for medical care. Intervention shall not proscribe endeavor by component or constituent medical societies to maintain high quality of service rendered by members serving under approved sickness service agreements between such societies and governmental boards or bureaus and approved by the respective societies.

Each contract should be considered on its own merits and in the light of surrounding conditions. Judgment should not be obscured by immediate, temporary or local results. The decision as to its ethical or unethical nature must be based on the ultimate effect for good or ill on the people as a whole.

Commissions

Sec. 4.—When a patient is referred by one physician to another for consultation or for treatment, whether the physician in charge accompanies the patient or not, it is

unethical to give or to receive a commission by whatever term it may be called or under any guise or pretext whatsoever.

Direct Profit to Lay Groups

Sec. 5.—It is unprofessional for a physician to dispose of his professional attainments or services to any lay body, organization, group or individual, by whatever name called, or however organized, under terms or conditions which permit a direct profit from the fees, salary or compensation received to accrue to the lay body or individual employing him. Such a procedure is beneath the dignity of professional practice, is unfair competition with the profession at large, is harmful alike to the profession of medicine and the welfare of the people, and is against sound public policy.

1940 MEETING

There is every indication that the 1940 meeting of the Tennessee State Medical Association will be a successful one.

The Local Committee on Arrangements, under the leadership of Dr. John B. Steele, has been functioning for quite sometime.

The Program Committee has been active for several months. On another page of this issue appears the scientific program in tentative form.

In addition to the usual scientific program, educational movies will be brought into use. A movie machine will be in operation continuously. Those who are in attendance who find themselves not interested in the subject of discussion before the general assembly will find something else of interest going on.

Arrangements have been made for scientific exhibits to occupy all the space available, and, of course, the technical exhibits compose a vital part of every meeting.

In addition to these features, there will be the scientific programs of the Tennessee Pediatric Society and the Tennessee Academy of Ophthalmology and Otolaryngology on Tuesday, April 9.

The Tennessee Radiological Society will have a luncheon meeting on Wednesday, April 10.

Certainly there is something of interest to everyone who is interested in medicine at all.

TENTATIVE PROGRAM OF THE TENNESSEE STATE MEDICAL ASSOCIATION

The following is a tentative program for the scientific session of the Tennessee State Medical Association to be held in Chattanooga, April 9, 10, 11, 1940.

The final complete program will be mailed each member well in advance of the meeting.

Tuesday, April 9, 1940

9:00 A.M.

1. Contraception, Its Growing Importance in Medicine.

DR. HARRY H. JENKINS, Knoxville.

To Discuss:

DR. H. P. HEWITT, Chattanooga.

DR. J. C. AYERS, Memphis.

2. A New Drainage Tube for Cholecystostomy, Enterostomy and Colostomy (slides).

DR. EDWARD T. NEWELL, Chattanooga.

To Discuss:

DR. R. L. SANDERS, Memphis.

DR. L. E. COOLIDGE, Greeneville.

3. Drugs in the Treatment of Heart Disease.

DR. JAMES L. BIBB, Chattanooga.

To Discuss:

DR. O. N. BRYAN, Nashville.

DR. EDWARD BRADING, Johnson City.

4. The Medical Aspects of the Menopause.

DR. L. E. BURCH, Nashville.

To Discuss:

DR. W. T. PRIDE, Memphis.

DR. C. L. CHUMLEY, Knoxville.

5. X-Ray Irradiation in the Treatment of Inflammatory Lesions.

DR. F. B. BOGART, Chattanooga.

To Discuss:

DR. H. S. SHOULDERS, Nashville.

DR. C. H. HEACOCK, Memphis.

Tuesday, April 9, 1940

2:00 P.M.

6. Convulsions in Children and Their Etiology and Treatment (a special address, with motion picture).

DR. M. G. PETERMAN, Milwaukee, Wisconsin.

7. The Place of Vitamins in Therapy.

DR. JOHN YOUMANS, Nashville.

To Discuss:

DR. JACK CHESNEY, Knoxville.

DR. W. C. CHANEY, Memphis.

8. Prolonged Labor.

DR. E. F. BUCHNER, JR., Chattanooga.

To Discuss

DR. J. R. REINBERGER, Memphis
DR. RICHARD McILLWAINE, Knoxville.

9. Pseudo-Sinusitis.

DR. EUGENE ORR, Nashville.

To Discuss:

DR. J. B. BLUE, Memphis.
DR. R. G. REAVES, Knoxville.

10. A New Interpretation of an Old Bladder Lesion.

DR. HENRY L. DOUGLASS, Nashville.

To Discuss:

DR. B. C. ARNOLD, Jackson.
DR. TOM R. BARRY, Knoxville.

Tuesday, April 9, 1940

8:00 P.M.

DR. J. E. CARSON, Maryville, Presiding

1. Presidential Address—"Why Medicine?"

DR. W. O. BAIRD, Henderson,
President, Tennessee State Medical Association.

2. An American Health Program.

DR. NATHAN B. VAN ETEN, New York City.
President-elect, American Medical Association.

Wednesday, April 10, 1940

8:30 A.M.

11. Seven Correctable Conditions Occasionally Labeled Idiopathic Epilepsy.

DR. THOS. F. FRIST, Nashville.

To Discuss:

DR. C. C. TURNER, Memphis.
DR. JESSE C. HILL, Knoxville.

12. The Acute Abdomen.

DR. E. G. KELLY, Memphis.

To Discuss:

DR. E. H. BAIRD, Dyersburg.
DR. C. F. WEBB, Jackson.

13. Some Observations on the State Program for the Relief of Crippled Children.

DR. R. W. BILLINGTON, Nashville.

To Discuss:

DR. E. J. LIPSCOMB, Memphis.
DR. ROBERT PATTERSON, Knoxville.

14. New Developments in the Treatment of Cancer with Radiation (a special address).

DR. CHARLES L. MARTIN, Dallas, Texas.

15. The Treatment of Spreading Peritonitis

DR. W. D. HAGGARD, and DR. JAMES A. KIRTLEY, JR., Nashville.

Wednesday, April 10, 1940

2:00 P.M.

SYMPOSIUM ON TRAUMATIC SURGERY

16. Head Injuries.

DR. R. G. WATERHOUSE, Knoxville.

To Discuss:

DR. T. D. McKINNEY, Nashville.
DR. WM. de GUTIERREZ MAHONEY, Nashville.

17. Occupational Dermatoses.

DR. E. R. HALL, Memphis.

To Discuss:

DR. A. H. LANCASTER, Knoxville.
DR. HOWARD KING, Nashville.

18. The Treatment of Fractures of the Neck of the Femur.

DRS. E. DUNBAR NEWELL, J. MARSH FRERE
and J. M. HIGGINBOTHAM, Chattanooga.

To Discuss:

DR. DUNCAN EVE, JR., Nashville.
DR. H. G. HILL, Memphis.

19. Treatment of Injuries to the Chest.

DR. DUANE M. CARR, Memphis.

To Discuss:

DR. M. B. DAVIS, Nashville.
DR. HERBERT ACUFF, Knoxville.

20. Treatment of Face Wounds.

DR. R. A. DANIEL, JR., Nashville.

To Discuss:

DR. W. M. ADAMS, Memphis.
DR. BEVERLY DOUGLAS, Nashville.

21. Choice of Anesthesia.

DR. H. M. AUSERMAN, Chattanooga.

To Discuss:

DR. L. W. EDWARDS, Nashville.
DR. E. G. WOOD, Knoxville.

Thursday, April 11, 1940

8:30 A.M.

22. A Symposium—A Critical Appraisal of Sulfanilamide and its Compounds in Modern Medicine.

10 MINUTES EACH

(a) Their Mode of Action.

DR. MILTON B. BUSH, Nashville.

To Discuss:

DR. R. B. WOOD, Knoxville.
DR. H. D. LONG, Chattanooga.

(b) Their Uses in Medicine.

DR. J. O. MANIER, Nashville.

To Discuss:

DR. HUGH MORGAN, Nashville.
DR. E. R. ZEMP, Knoxville.

(c) Their Uses in Surgery.

DR. MORTON J. TENDLER, Memphis.

To Discuss:

DR. ROBERT E. SULLIVAN, Nashville.
DR. JOHN L. McGEHEE, Memphis.

(d) Toxic Effects of Sulfanilamide and Allied Drugs.

DR. F. E. MARSH, Chattanooga.

To Discuss:

DR. J. C. PENNINGTON, Nashville.
DR. R. C. GAW, Gainesboro.

23. A Program for the Management and Treatment of Tuberculosis which Embraces both the Therapeutic and Public Health Aspects of the Disease.

DR. C. S. THOMAS, Nashville.

To Discuss:

DR. W. W. HUBBARD, Nashville.
DR. RUFUS SMITH, Knoxville.

24. Carcinoma of Uterus.

DR. H. M. TIGERT, Nashville.

To Discuss:

DR. J. A. CRISLER, JR., Memphis.
DR. L. A. HAUN, Knoxville.

25. Gastritis.

DR. JACK WITHERSPOON, Nashville.

To Discuss:

DR. H. G. RUDNER, Memphis.
DR. C. R. THOMAS, Chattanooga.

Thursday, April 11, 1940

2:00 P.M.

26. Prostatic Resection, with lantern slides demonstration.

DR. J. B. NEIL, Knoxville.

To Discuss:

DR. R. A. HENNESSEY, Memphis.
DR. C. F. ANDERSON, Nashville.

27. Lesions about the Sella Turcica.

DR. NICHOLAS GOTTEN, Memphis.

To Discuss:

DR. R. E. SEMMES, Memphis.
DR. COBB PILCHER, Nashville.

28. The Treatment of Carcinoma of the Lip.

DR. GEORGE S. JOHNSON, Nashville.

To Discuss:

DR. C. M. HAMILTON, Nashville.
DR. W. D. L. RECORD, Chattanooga.

29. An Analysis of Mortality Figures in Acute Appendicitis and Appendiceal Peritonitis.

DR. J. PAUL BAIRD, Dyersburg.

To Discuss:

DR. LEE K. GIBSON, Johnson City.
DR. GEORGE C. WILLIAMSON, Columbia.

30. Gastro-intestinal Symptoms of Urological Conditions.

DR. C. H. BARNWELL, Chattanooga.

To Discuss:

DR. THOS. D. MOORE, Memphis.
DR. R. A. BARR, Nashville.

THE TENNESSEE ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

President, DR. ROBERT S. LEACH, Knoxville
Vice-President, DR. S. H. LONG, Chattanooga
Secretary, DR. WILLIAM D. STINSON, Memphis

HOTEL PATTEN
Room 908

Tuesday, April 9, 1940
9:00 A.M.

1. Moving Pictures.

2. Foundation Lecture in Ophthalmology; Secondary Glaucoma.

DR. HARRY S. GRADLE, Professor of Ophthalmology, Northwestern University, Chicago.

3. Round-Table Discussion.

4. Presentation of Pathological Specimens and New Instruments.

PRESIDENT'S LUNCHEON

Guest of the President, Dr. R. S. Leach, Knoxville.

5. Moving Pictures.

6. Foundation Lecture in Otolaryngology: Acute Infections of the Mouth, Pharynx, Cervical Region and Mediastinum.

DR. A. C. FURSTENBERG, Professor of Otolaryngology and Dean of the Medical School, University of Michigan, Ann Arbor.

7. Round-Table Discussion.

8. Executive Session with Election of Officers.

DINNER

Guest of the Chattanooga Society of Ophthalmology and Otolaryngology.

1. President's Message.

2. Installation of Officers.

TENNESSEE STATE PEDIATRIC SOCIETY

President, DR. JAMES C. OVERALL, Nashville
Vice-President, DR. F. TOM MITCHELL, Memphis
Secretary, DR. KINSEY M. BUCK, Memphis

HOTEL PATTEN

Tuesday, April 9, 1940

9:30 A.M.

President's Address.

DR. JAMES C. OVERALL, Nashville.

9:45 A.M.

Pneumococcic Meningitis.

DR. O. L. VON CANNON, Chattanooga.

10:00 A.M.

Diarrhea in the Newborn.

DR. HAROLD J. STARR, Chattanooga.

10:15 A.M.

Masturbation in Children.

DR. OGDEN C. BRUTON, Nashville.

10:30 A.M.

Etiology and Treatment of Infantile Eczema.

DR. WM. R. GRAVES, Memphis.

10:45 A.M.

Laryngo-tracheo Bronchitis (a special address).

DR. HARRY ANDREWS, Louisville, Kentucky.

11:15 A.M.

Sulfapyridine in Pneumonia.

DR. J. C. WRIGHT, Chattanooga.

11:30 A.M.

Contact Infections.

DR. WM. E. VAN ORDER, Chattanooga.

11:45 A.M.

Vitamin K and Prothrombin Deficiency in the Newborn (a special address).

DR. WILLIS H. THOMPSON, Minneapolis, Minn.

12:15 P.M.

Election of Officers.

12:30 P.M.

Luncheon Honoring:

DR. M. G. PETERMAN, Milwaukee, Wisconsin.

DR. HARRY ANDREWS, Louisville, Kentucky.

DR. WILLIS H. THOMPSON, Minneapolis, Minn.

AFTERNOON SESSION

A combined meeting of the Tennessee Pediatric Society and the Tennessee State Medical Association.

2:00 P.M.

Convulsions in Children and their Etiology and Treatment (with motion picture).

DR. M. G. PETERMAN, Professor of Pediatrics, Marquette University, Milwaukee, Wisconsin.

WOMAN'S AUXILIARY

President, MRS. MATT B. MURFREI, Murfreesboro

President-elect, MRS. W. T. BRAUN, Memphis

Exhibit Chairman, MRS. W. W. POTTER, Knoxville

HEADQUARTERS, READ HOUSE

Hostesses, Wives of members of the Hamilton County Medical Society

General Chairman, MRS. J. D. L. MCPHEETERS

Transportation Chairman, MRS. F. E. MARSH

Publicity Chairman, MRS. FRANKLIN B. BOGART

Tuesday, April 9, 1940

10:00 A.M.

Registration, MRS. HAROLD J. STARR, Chairman
Mezzanine Floor, Read House.

3:00 P.M.

Pre-Convention Board Meeting, Mrs. Matt B. Murfree, presiding, Parlor "B," Read House

7:00 P.M.

Dinner—Chattanooga ladies, hostesses.

Wednesday, April 10, 1940

9:30 A.M.

Thirteenth annual general business meeting called to order.

Fairlyland Club. Cars leaving Read House 9 o'clock for transportation.

Mrs. Matt B. Murfree, presiding.

Invocation, Dr. E. S. Campbell.

Welcome, Mrs. J. D. L. McPheeters.

Response, Mrs. R. Z. Linney.

Minutes, Roll Call.

Treasurer's report

Parade of counties.

Report of state chairmen.

Report of state officers.

Report of president.

Introduction of guests.

Address, "Present-Day Opportunities of Service for the Doctor's Wife," Mrs. Charles P. Corn, Greenville, South Carolina

Business.

Report of nominating committee.

Election of officers.

Installation of officers, Mrs. Rollo K. Packard.

1:00 P.M.

Luncheon, Fairlyland Club.

Welcome address, Dr. John B. Steele.

Presentation of cups and trophies.

2:30 P.M.

Pilgrimage through Wild Flower Gardens conducted by convention hostesses.

7:00 P.M.

State Dinner, Radio Lounge, Read House.

Introducing, Mrs. W. T. Braun.

Guest speaker, Mrs. Rollo K. Packard, president Woman's Auxiliary to the American Medical Association.

Courtesy resolutions, Mrs. Willis Campbell.

9:30 P.M.

Post-Convention Board Meeting, Mrs. W. T. Braun presiding, Parlor "B," Read House

Exhibits, Parlor "A," Read House.

DEATHS**DR. J. B. PHILLIPS**

Dr. J. B. Phillips, Chattanooga, University of Louisville, School of Medicine, 1910; aged fifty-nine years; died March 7 from injuries received in an automobile accident.

DR. BAILEY BROWN SORY

Dr. Bailey Brown Sory, Cedar Hill, Vanderbilt University, School of Medicine, 1893; aged sixty-nine; died suddenly, March 7.

DR. M. A. BEASLEY

Dr. M. A. Beasley, Madison, Vanderbilt University, School of Medicine, Nashville, 1904; aged sixty-six; died, March 9, from injuries received in an automobile accident.

DR. CHARLES MARSHALL CHILTON

Dr. Charles Marshall Chilton, Memphis, Memphis Hospital Medical College, 1901; aged sixty-one; died suddenly on February 10.

NEWS NOTES AND COMMENTS

Drs. Joseph W. Alford, Jr., and James A. Kirtley, Jr., formerly associated with the late Dr. W. D. Haggard in the Haggard Clinic, announce the removal of their offices to 1219-1221 Bennie-Dillon Building, Nashville.

More than 8,000 leading American doctors and their wives will participate in an elaborate two-day program at the World's Fair of 1940 in New York, June 14 and 15, announced Dr. Morris Fishbein, editor of the *Journal of the American Medical Association*, today. The American Medical Association is staging its annual convention in New York City, June 10-14, inclusive.

The entire House of Delegates of the American Medical Association, comprising 250 doctors, will be dined and entertained at the fair Monday, June 10, said Dr. Charles Gordon Heyd of New York City, chairman of the Convention Committee. Medicos are currently arranging a full program for public interest and consumption at the fair Saturday, June 15.

ARMY EXPERIENCE FOR PHYSICIANS

An interesting medical corollary to the augmentation of the United States Army during 1940 and 1941 and to the planned large scale army maneuvers during the spring and summer of 1940 is the broad medico-military experience which a great number of civilian physicians will receive. Medical Reserve officers are being used to augment the entire Army Medical Service, which includes everything from small unit installations to large station hospitals, general hospitals, and hospitals designed primarily for the treatment of specific types of cases.

Physicians under thirty-five years of age who are desirous of obtaining extended active duty with the army, but who do not hold reserve commissions are being offered appointments in the Medical Corps Reserve in the grade of first lieutenant in order to permit them to be placed on such duty. Captains and lieutenants are at present being offered excellent assignments throughout the continental United States, and it is hoped that authority will be granted to actually permit some officers to go to Hawaii and Panama. In addition to having a new and very busy experience in the practice of medicine, the average officer finds the pay and allowances attractive. The pay and allowances for a married first lieutenant amount to approximately \$263 a month; for

a single first lieutenant to approximately \$225 a month; for a married captain to approximately \$316 a month; and for a single captain to approximately \$278 a month. In most cases the above pay and allowances would apply inasmuch as government quarters are not usually available for officers on extended active duty. In the few instances where government quarters are available, the amounts would be \$40, \$60, and \$60, \$80 less per month, respectively. In addition, the officer is reimbursed for mileage traveled from his home to his station, and upon completion of his tour of duty, is reimbursed similarly for the travel to his home.

Application for one year of active duty, or for appointment in the Medical Corps Reserve with a view to obtaining one year of active duty with the army, should be requested at once by a letter addressed to the Commanding General of the Corps Area* wherein the physician permanently resides. In addition, the application should contain concise information regarding permanent address, temporary address, number of dependents, earliest date available for active duty, and that internship has been

*First Corps Area (Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut), Army Base, Boston, nine, Massachusetts.

Second Corps Area (New York, New Jersey, Delaware), Governors Island, New York.

Third Corps Area (Pennsylvania, Maryland, Virginia, District of Columbia), Post Office and Courthouse, Baltimore, Maryland.

Fourth Corps Area (North Carolina, South Carolina, Georgia, Florida, Alabama, Tennessee, Mississippi, Louisiana), Post Office Building, Atlanta, Georgia.

Fifth Corps Area (Ohio, West Virginia, Indiana, Kentucky), Fort Hayes, Columbus, Ohio.

Sixth Corps Area (Illinois, Michigan, Wisconsin), Post Office Building, Chicago, Illinois.

Seventh Corps Area (Missouri, Kansas, Arkansas, Iowa, Nebraska, Minnesota, North Dakota, South Dakota), New Federal Building, Omaha, Nebraska.

Eighth Corps Area (Texas, Oklahoma, Colorado, New Mexico, Arizona), Fort Sam Houston, San Antonio, Texas.

Ninth Corps Area (Washington, Oregon, Idaho, Montana, Wyoming, Utah, Nevada, California), Presidio of San Francisco, San Francisco, California.

(or will be) completed; and it should be accompanied by a report of physical examination recorded on the army form, W.D. A.G.O. 63, which may be obtained from any army station. From the group of reserve officers placed on extended active duty since August, 1939, over twenty-five per cent of those within the age requirements of thirty-two years of age or less for commission in the Regular Army Medical Corps found military service sufficiently to their liking to cause them to take entrance examinations for the regular army.

The American Medical Golfing Association's Twenty-Sixth Annual Tournament will be held at Winged Foot Golf Club, Mamaroneck, New York, Monday, June 10, 1940.

Some 250 out of the 1,360 fellows of the American Medical Golfing Association are expected to take part at Winged Foot in the thirty-six-hole competition. The hours for teeing off are from 7:00 A.M. to 2:00 P.M.

The sixty prizes in the nine events will be distributed after the banquet at the clubhouse at 7:00 P.M.

All members of the American Medical Association are eligible for fellowship in the American Medical Golfing Association.

For registration application write the secretary, Bill Burns, 2020 Olds Tower, Lansing, Michigan.

COMMERCIAL EXHIBITORS

A number of firms have reserved space for commercial exhibits at the meeting to be held at Chattanooga. In issuing invitations to pharmaceutical houses great care was taken to invite only such houses as produce standard products and handle them in an ethical manner. Representatives of the following firms will be present at the convention and will make their contribution to the success of the convention:

A. S. Aloe Company, St. Louis, Missouri.

The Borden Company, New York City.

Chattanooga Surgical Company, Chattanooga.

Dick X-ray Company, Memphis.

Fillauer Surgical Supplies, Chattanooga.

C. B. Fleet Company, Lynchburg, Virginia.

General Electric X-ray Company, Chicago, Illinois.

Lederle Laboratories, New York City.

Eli Lilly & Company, Indianapolis, Indiana.

J. B. Lippincott Company, Philadelphia, Pennsylvania.

J. A. Majors Company, New Orleans, Louisiana, and Dallas, Texas.

Mead Johnson & Company, Evansville, Indiana.

Milam Optical Company, Nashville.

Petrolagar Laboratories, Chicago, Illinois.

Sharp & Dohme Company, Philadelphia, Pennsylvania.

S & H X-ray Company, Atlanta, Georgia.

Smith, Kline & French, Philadelphia, Pennsylvania.

John Wyeth & Brothers, Philadelphia, Pennsylvania.

Physicians of Tennessee will be interested to know that Dr. Willis H. Thompson will close his fifth pediatric circuit the first week in March. The sixth circuit will open the week of the eleventh in south Middle Tennessee and will include the teaching centers of Murfreesboro, Shelbyville, Tullahoma, McMinnville, and Winchester.

Slightly more than 600 physicians have registered and have taken the postgraduate course in pediatrics. Twenty-five cities or county seats, as teaching centers, have been used up to date. In Memphis a total of 113 physicians took the course. This included the colored physicians who were in a special group by themselves. In Nashville a total of seventy-one took the course, including a special group for colored physicians which was arranged at Meharry Medical College.

Dr. Thompson is giving many new methods of technique and therapy in connection with sulfanilamide treatment of infections in children. Several physicians have registered for the second time in the course and are driving to other near-by cities to repeat this splendid course now being offered by the association.

The seventh circuit will open in the Knoxville area and will include the teaching centers of Knoxville, Sevierville, Morristown,

Clinton, and LaFollette. The course in the Knoxville area will open the latter part of May.

NOTICE: MEDICAL TECHNOLOGISTS

At the request of the surgeon general of the army and in compliance with its policy of cooperation with both the army and navy, the American Red Cross, as an expansion of its peace-time service for the military forces, has undertaken the enrollment of various types of medical technologists who are willing to serve in the medical departments of the army and navy if and when their services are required at the time of a national emergency.

Persons with the following qualifications will be enrolled:

- Chemical laboratory technicians (male).
 - Dental hygienists (male and female).
 - Dental mechanics (male).
 - Dietitians (male and female).
 - Laboratory technicians (male and female).
 - Meat and dairy hygienists (inspectors) (male).
 - Nurses* (male).
 - Occupational therapy aides (male and female).
 - Orthopedic mechanics (male).
 - Pharmacists (male and female).
 - Physical therapy technicians (aides) (male and female).
 - Statistical clerks (male and female).
 - X-ray technicians (male and female).
- General qualifications for enrollment are as follows:
1. Citizens of the United States.
 2. Ages 21-45 years (army) ; 18-35 (navy—men only).
 3. Physically qualified. Applicants must pass a satisfactory physical examination, according to standards set, respectively, by the Army and Navy Medical Departments.
 4. Women applicants must be unmarried.
- Technologists who qualify according to these general standards and who are will-

ing to enroll for service as outlined above should communicate with the American National Red Cross, Washington, D. C.

EDUCATIONAL QUALIFICATIONS

Educational qualifications of health officers approved by the Governing Council of the American Public Health Association, October 19, 1939.

Recommendations

1. That candidates for appointment as health officer should be graduates of approved medical schools who have completed successfully not less than one year of internship in an approved hospital and in addition, a course of not less than one year of graduate instruction in a university leading to a degree in public health.*

2. That recognition be given to the fact that practical experience in public health administration is an essential part of the education of a health officer, and that great achievement can usually be attained only after long experience. These facts should always be taken into consideration in the selection of health officers, particularly where the position is one of great administrative responsibility.

The above recommendations are made for the future guidance of officials responsible for the appointment of health officers, and for the guidance of individuals looking forward to careers in public health. In making these recommendations the American Public Health Association expressly recognizes the professional standing of persons now performing credible service as health officers.

*Where lack of qualified personnel makes it impossible to require a full year of graduate instruction in public health, the postgraduate requirements considered temporarily as applicable for medical health officers for small jurisdictions may be the satisfactory completion of not less than three months of postgraduate instruction in public health in a university, and not less than three months of supervised field experience in a well-organized health department. Such individuals should be required to complete the course leading to a graduate degree in public health as soon as they have demonstrated ability sufficient to warrant such instruction.

*This group will not be members of the Army or Navy Nurse Corps which, under basic law, are limited to females, but will be used as technologists for service auxiliary thereto.

NORMAN BAKER AND ASSOCIATES GET SENTENCES

Norman Baker, fifty-six, founder of hospitals at Eureka Springs, Arkansas, and Muscatine, Iowa, and one time a candidate for governor and United States senator in Iowa, was sentenced to four years in prison and fined \$4,000 recently upon his conviction of use of the mails to defraud in the advertisement of a claimed cancer cure.

R. A. Bellows, fifty-two, superintendent of the Baker Hospital at Eureka Springs, was sentenced to two years; and Dr. J. L. Stalter, fifty-six, technical adviser at Eureka Springs, was sentenced to a year and a day.

United States District Judge T. C. Trimble passed sentence on the three after refusing their motion for a new trial. They were convicted after a sixteen-day trial.

FINNISH RELIEF FUND, INC.

The Finnish Relief Fund, Inc., is sponsored by Mr. Herbert Hoover. It is approved by the Finnish minister in Washington, D. C., His Excellency Hjalmar Procopé.

It has the main purpose of accepting for the Finnish people and transmitting to Finland any funds contributed for this great cause by the American people.

Contributions, unless specifically intended to be used for war material, will be used for food and clothing for the Finnish Civilian population, many of whom are suddenly made homeless by having their houses irreparably demolished by the incendiary bombs from Russian airplanes.

Members of the American Medical Association are the only doctors who will be asked to contribute through this fund.

It is hoped the profession will respond as generously as possible. It is further hoped that every doctor will make some contribution, and no matter how small it may be, it will be gratefully accepted. We believe the profession should have 100 per cent of its members become contributors to this most worthy cause.

No money is deducted for expenses from any contribution made through this fund, and every dollar donated arrives in Finland worth one hundred cents.

No salaries are paid and no financial remunerations are made to officers on duty with the Finnish Relief Fund. Expert auditors make a daily checkup of the donations acquired and chart the results.

The National Chairman of the Medical Division of the Professional Groups of the Finnish Relief Fund, Inc., is Dr. John Frederick Erdmann of New York.

A director (chairman) for the Medical Division has been or will be appointed from each state who will try to get in touch with every member of the American Medical Association of that state by such method as he deems best.

The Executive Director of the Medical Division is Dr. Kerwin W. Kinard, who has offices at fund headquarters.

All checks should be made payable to the Finnish Relief Fund, Inc., and sent to the Medical Division of the Finnish Relief Fund, Inc., 420 Lexington Avenue, New York, New York.

CONVENTION NOTES



Arthur (Art) F. Briese of Chicago, known as "America's Knight of Satire," will headline the banquet program in the Patten Hotel, Wednesday evening, April 10.

Committeemen along his trail from coast to coast report much popping of buttons from the operations of this outstanding humorist. Some suggest that first aid be kept on hand for members and guests who *pass out* from the effects of "laughing gas."

Chairman Dr. J. B. Steele says everyone he has asked about Briese immediately burst into such uncontrollable laughter that he has been unable to get a coherent story as to just how he does it.

"J. B." promises, however, that all surgeons will bring their instruments ready to operate at the first pop of a button in case of emergency.

It looks like skulduggery at the old cross-roads and a record attendance is anticipated.

WOMAN'S AUXILIARY

President.....Mrs. Matt Murfree
Murfreesboro

President-elect.....Mrs. W. T. Braun
Memphis

Press and Publicity.....Mrs. R. Z. Linney
Madison

Have you made your hotel reservation for the Eighteenth Annual Convention of the Woman's Auxiliary to the American Medical Association which will be held in New York City, June 10 to 14, 1940?

The headquarters are at the Hotel Pennsylvania and we are sure you will not want to miss this convention which promises to be an outstanding one. *Mail your reservation today* to Dr. Peter Irving, Housing Bureau, Room 1036, 233 Broadway, New York City.

The following plans for the convention in April, to be held in Chattanooga, have been received from our state president.

The women's headquarters will be the Read House, registration beginning on the mezzanine at 9:30 A.M. Tuesday the ninth of April.

Mrs. J. D. L. McPheeters is chairman of the committee for arrangements for the women. Mrs. Ed Newell and Mrs. Sheridan are on her committee.

The preconvention meeting will be held Tuesday afternoon. Tuesday night the convention will be the guests of the Chattanooga ladies for dinner.

Wednesday morning will be the general business meeting and the luncheon up on Lookout Mountain at Fairyland, and after luncheon a pilgrimage through the wild flower gardens on the mountain.

Wednesday night the state dinner will be at the Read House in the radio lounge.

Mrs. Rollo K. Packard of Chicago, president of the National Auxiliary, will be with us at the convention and will address the meeting at the dinner Wednesday night.

Also Dr. Steele wrote to Dr. Van Etten of New York City and asked him to speak to us. This will probably be at the luncheon on Wednesday. Dr. Van Etten is coming to address the men. He is president-elect of the American Medical Association.

The post convention meeting will be held Wednesday night after the state dinner.

KNOX COUNTY

The Auxiliary to the Knox County Medical Society will meet Wednesday, March 6, at 10:30 A.M., at the home of Mrs. Edgar Grubb in Holston Hills. Mrs. W. C. Long, president, will preside.

Mrs. R. G. Reaves, chairman of Doctors' Day Committee, will be in charge of the program.

Mrs. R. G. Reaves, Mrs. H. D. Peters, and Mrs. H. E. Christenbery will review the book, "Centennial History of Tennessee State Medical Association."

Mrs. Troy Bagwell will be chairman of the day for the luncheon committee, with Mrs. Alvin Webber and Mrs. W. A. Bois' committees assisting.

Mrs. Long requests members of the Executive Board to be there at 9:45 for a board meeting.

In February the Knox County Auxiliary gave their annual tea at General Hospital, at which time members brought books as valentines to add to the library at the nurses home.

Speaking before the Woman's Auxiliary to the Stones River Academy of Medicine,

Dr. J. B. Black, director of the Rutherford County Health Department, traced the health work of the county for the past fifteen years.

Dr. Black was introduced by Mrs. John Cason, program chairman.

Mrs. Harvey Carter was admitted as a new member of the auxiliary.

Following the program the hostesses, Mrs. Matt Murfree and Miss Mary Roberts Murfree, served refreshments.

Woman's Auxiliary of the Nashville Academy of Medicine and Davidson County Medical Society entertained Friday, February 16, at its annual dinner dance at Belle Meade Country Club in celebration of the thirteenth anniversary of its founding.

Assisting the president, Mrs. J. Travnick, Jr., in receiving the guests were the officers of the club: Mrs. T. G. Pollard, vice-president; Mrs. George Holcomb, secretary; Mrs. Ruben Gayden, treasurer; and Mrs. J. T. Hayes, historian.

Decorations emphasizing the mid-Victorian period were used in the dining room, where a color scheme of pink and purple predominated. On the tables were large pink lace hearts filled with fresh violets and pink tapers. Small favors tied with purple cellophane marked the places and large cupid figures stood on the mantel shelf. Mrs. Horace Gayden was chairman of decorations.

Mrs. R. Z. Linney, chairman of the dinner, was introduced by Mrs. Cleo Miller, program chairman. Mrs. Linney's assisting committee included: Mrs. W. B. Anderson, Mrs. B. F. Byrd, Mrs. Theodore Morford, Mrs. Oscar Nelson, Mrs. W. R. Cate, and Mrs. Hollis Johnson.

Dr. Robert Brown, president of the Nashville Academy of Medicine, and guest speaker for the occasion, was introduced by the president, who also presented the Advisory Council, Dr. B. F. Byrd, Dr. Hollis Johnson, and Dr. W. B. Anderson.

During the dinner hour a program of accordion music was given and dancing was enjoyed following the dinner.

MEDICAL SOCIETIES

Davidson County:

February 13—Memorial exercises in memory of Dr. William David Haggard.

February 23—"Concerning the Treatment of Cardiac Failure," by Dr. Fred Smith, professor of Internal Medicine, University of Iowa, Iowa City, Iowa.

February 27—"Carcinoma of the Colon," by Dr. Charles Trabue. Discussion opened by Dr. Barney Brooks.

"Late Effects of Head Injury," by Dr. W. deGutierrez Mahoney. Discussion led by Dr. Frank Luton.

March 5—"Edema," by Dr. John Youmans. Discussion by Dr. D. W. Hailey.

"The Use of Silk in Gynecological Surgery," by Dr. Sam Cowan, Jr. Discussion by Dr. John Burch.

March 12—"Report of Splenectomies with Results in Sixty Cases," by Dr. George Curtis, Department of Surgery, University of Ohio, Columbus, Ohio.

Dyer, Lake, and Crockett Counties:

The Dyer, Lake, and Crockett Counties Medical Society met March 6, in regular monthly session. Scientific program:

"Diagnostic Errors and Therapeutic Triumphs," by Dr. J. E. Frazier, Newbern.

"Treatment of Burns," by Dr. W. M. Adams, Memphis.

"The Differentiation of Symptoms Suggesting Cardiac Disease," by Dr. H. B. Gotten, Memphis.

(Signed) C. L. DENTON, *Secretary*.

Fayette-Hardeman Counties:

A meeting was held at the Western State Hospital on Friday evening, February 23.

Dr. Harwell Wilson, Memphis, discussed "Diagnosis of Common Tumors," and Dr. Edwin J. Lipscomb, Memphis, discussed "The Treatment of Fracture of the Hip in the Aged with the Smith-Peterson Pin." Both of these excellent papers were accompanied by lantern slides and were discussed freely by members of the society.

(Signed) FRANK E. JONES, M.D., *Secy.*

Hamilton County:

February 22—"Fractures of the Hip," by Dr. Robert C. Robertson.

February 29—Address by Dr. B. T. Beasley, Atlanta.

March 7—"Heart Wound," by Dr. Alex Steward.

"Rocky Mountain Spotted Fever," by Dr. F. O. Pearson.

March 14—"Cancer of the Rectum," by Dr. Cecil E. Newell.

"Deafness," by Dr. Chester L. Lassiter.

Papers scheduled to be read:

March 21—"Relapse and Reinfection in Syphilis," by Dr. R. L. Patterson.

March 28—"The Role of X-ray in the Diagnosis and Treatment of Fractured Hips," by Dr. J. Marsh Frere.

April 4—"Pneumonia in Children," by Dr. Harold J. Starr.

"The Treatment of Pneumonia," by Dr. Carl A. Hartung.

April 11—Meeting of the Tennessee State Medical Association, April 9, 10, 11.

Hardin, Lawrence, Lewis, Perry, and Wayne Counties:

January 30—"Congenital Deformity," by Dr. J. H. Hughes, Savannah. Discussion by Dr. F. H. Norman, Waynesboro.

"Respiratory Infections in Children," by Dr. John M. Lee, Nashville. Discussed by Dr. V. H. Crowder, Lawrenceburg.

"Perforated Peptic Ulcer," by Dr. John M. Tilley, Murfreesboro. Discussed by Dr. J. T. Keeton, Clifton.

"Seven Correctable Conditions Frequently Misdiagnosed," by Dr. Thomas F. Frist, Nashville. Discussed by Dr. J. W. Danley, Lawrenceburg.

February 27—"Intestinal Obstruction," by Dr. William C. Kennedy, Florence, Alabama.

"Medical Ethics," by Dr. Leo Harris, Lawrenceburg.

"Prostatic Obstruction," by Dr. E. Craig Coats, Florence, Alabama.

Twenty minutes open forum on "Sulfapyridine in Pneumonia," opened by Dr. V. H. Crowder, Lawrenceburg.

Knox County:

February 6—"Progress and Prospect in Tuberculosis Control," by Dr. J. B. Naive. Discussion by Drs. W. H. Enneis and A. G. Hufstedler.

February 13—"Treatment of Gross Deformities of the Hips, with Special Reference to Older Children and Adults," by Dr. Robert F. Patterson. Discussion by Drs. Troy Bagwell and Jarrell Penn.

February 20—"Management of the Asthmatic," by Dr. Glenn Grubb. Discussion by Drs. H. C. Long, Walter Luttrell, and R. B. Wood.

February 27—"Coronary Disease," by Dr. Rufus Smith. Discussion by Drs. Dan Thomas, R. B. Wood, H. C. Long, E. A. Guynes, and C. J. Carmichael.

March 5—"Differential Diagnosis in Abdominal and Urological Conditions," by Dr. Tom R. Barry. Discussion by Drs. E. G. Wood, Robert Layman, and Charles L. Chumley.

Shelby County:

At the meeting of the House of Delegates of our society on March 6, a motion was unanimously adopted that this society contribute \$250 to the support of the National Physicians Committee for the Extension of Medical Service. In addition to this, an assessment of three dollars against each member of the society for the same purpose was authorized.

I was also instructed to forward this information for publication in the JOURNAL. (Signed) A. F. COOPER, M.D., *Secretary*.

Sullivan-Johnson Counties:

The Sullivan-Johnson County Medical Society met at the Hotel General Shelby in Bristol, Virginia, on Wednesday night, March 6, with thirty-two members and guests present.

Dr. R. B. Wood of Knoxville spoke on the topic, "Hypertension," and there were a large number of questions asked and considerable discussion on this subject. Dr. Wood's address was exceptional in that he spoke slowly, distinctly, and scientifically, and he outlined his topic in a chronological order.

Dr. C. F. N. Schram was elected delegate to the State Association meeting, and Dr. F. L. Alloway was elected alternate.

(Signed) C. F. N. SCHRAM, M.D.,
Secretary.

Washington County:

The regular monthly meeting of the Washington County Medical Society was held at the John Sevier Hotel, Thursday, March 7, at 7:30 P.M.

The County Tuberculosis Committee was appointed as follows: Dr. A. J. Willis, chairman; Dr. T. P. Day; and Dr. G. K. Scholl.

A program committee for the anniversary meeting next month was appointed as follows: Drs. J. L. Hankins, Poole, and McKee.

Dr. Harry Myron was admitted as a new member.

Dr. E. T. Brading gave a paper on "Common Neurological Conditions," which was discussed by Drs. Scholl, Willis, and Poole.

There were twelve members present, including Drs. Campbell, J. L. Hankins, Brading, Willis, McKee, Jones, Poole, Day, Fisher, W. D. Hankins, Scholl, and Gresham.

Thursday, April 4, will be the thirty-seventh anniversary of the society. Dinner will be served at the John Sevier Hotel. Guest speaker to be announced later.

OTHER MEDICAL SOCIETIES

The St. Joseph Clinical Society will hold its ninth annual two-day spring clinic on March 20 and 21. For full particulars write Jacob Kulowski, M.D., Secretary, 321 Kirkpatrick Building, St. Joseph, Missouri.

Cumberland, Jackson, Overton, Putnam, and White Counties:

The Five-County Medical Society held a meeting at Gainesboro and elected the following officers for the year 1940: Dr. L. M. Freeman, Granville, president; Dr. L. R. Anderson, Gainesboro, vice-president; Dr. Fred Terry, Cookeville, secretary-treasurer.

A large number of physicians attended the meeting.

The next meeting will be at Crossville on March 21.

ABSTRACTS OF PAPERS PRESENTED AT VANDERBILT MEDICAL SOCIETY, JANUARY 5, 1940

1. Case Report: "Interstitial Hypertrophic Polyneuritis of Dejerine and Sottas," by Dr. F. T. Billings.

Hypertrophic neuritis in a twenty-nine-year-old male with typical clinical course and pathology. Illness three and one-half years; one two-year remission with recurrence. Symptoms and findings: weakness, diminution of all sensory modalities in stocking-glove distribution, weakness and atrophy of extremities and right side of tongue with obvious fasciculations. Peripheral nerves nodular, thickened easily, palpable. Biopsy of nerve showed typical proliferation of the sheaths of Schwann and "onion bulb" formation. Spinal fluid under normal pressure contained increased protein. X-ray demonstration of intrathecal lipiodol showed defects in the outline of spinal canal interpreted as due to pressure from hypertrophied nerve roots.

This case report was discussed by Drs. W. deGutierrez Mahoney and E. W. Goodpasture.

2. "Studies Related to Lipoid Metabolism and Lipoid Storage Diseases," by Dr. Edna H. Tompkins.

Phospholipides from beef brains stimulate infiltrations of phagocytic mononuclear cells when injected subcutaneously and are rapidly absorbed. The mononuclears following injection of the sphingomyelin fractions resemble the cells in Niemann Pick's disease.

Galactolipides are inert when injected subcutaneously and remain unabsorbed. Injection of mixtures of galactolipides and phospholipides, however, are followed by infiltrations of phagocytic mononuclears and removal of both substances. The cells differ from those due to phospholipides alone. They resemble the cells in Gaucher's disease.

The conclusion is drawn that galactolipides are not absorbed subcutaneously, but that they can be absorbed in the presence of phospholipides.

This paper was discussed by Drs. Katharine Dodd, Edgar Jones, C. S. Robinson, Horton Casparis, and Paul D. Lamson.

3. "Gastric Ulcers, Incidence, and Complications: A Local Review," by Dr. Elkin L. Rippey.

Most authorities fail to differentiate between gastric and duodenal ulcers and discuss them under the general heading of "Peptic Ulcer." This is a mistake, since there is so great a difference in location, complication, and response to both medical and surgical treatment.

This review embraces all cases of gastric ulcer from all available records in the hospitals and out-patient departments in the city of Nashville. We found that in 332,336 admissions there were only 140 cases of gastric ulcer. In this series there occurred forty-seven perforations with twenty-six deaths, a mortality of 55.3 per cent. Thirty with hemorrhage with five deaths, 16.6 per cent mortality, and fifteen with obstruction. Forty had elective surgery with a mortality of 17.5 per cent. Death from all causes in this series was 29.2 per cent.

This paper was discussed by Drs. Alfred Blalock, Burness E. Moore, Herbert C. Francis, and John B. Youmans.

ABSTRACTS OF PAPERS PRESENTED AT VANDERBILT MEDICAL SOCIETY, FEBRUARY 2, 1940

1. Case Report: "Chylothorax and Chyloperitoneum," by Drs. Carrington Harrison and Max Little.

A seventeen-year-old white female was admitted to the hospital two months ago, two months after receiving a minor injury without fracture to the left shoulder and left supraclavicular region. One month after injury patient developed progressive dyspnea, and aspiration of left pleural cavity at this time revealed massive chylothorax. Patient had signs of massive left pleural effusion and massive ascites. For two months she has now been on a fat-free diet, has had about fifty liters of chyle with-

drawn from both left pleural and peritoneal cavities, and has had twelve liters of chyle reintroduced intravenously. She has lost about ten pounds in weight and her nutritional state has remained fairly good. Chyle continues to accumulate at about the same rate as on admission.

This case is presented as one of chylothorax and chyloric ascites, probably due to traumatic rupture of the thoracic duct.

The fifty-odd cases reported in the literature were briefly discussed.

Blood plasma and chylous fluids obtained from the thorax and peritoneum during one month were analyzed for total lipid, neutral fat, cholesterol esters, free cholesterol, phosphatides, lipid nitrogen, total protein, and albumen. The lipid content was higher in the thoracic fluid than in peritoneal fluid, the protein higher in peritoneal fluid. The total protein varied from 2.8 to 3.8 per cent, the albumen from 1.9 to three per cent. On a fat-free diet the neutral fat fraction of the thoracic fluid decreased. By intravenous injection of the fluids the concentration of the lipid fractions in plasma could be maintained within normal range and the serum proteins within the lower limits of normal.

This case was discussed by Drs. C. S. Robinson, Alfred Blalock, Hugh J. Morgan, C. C. McClure, Herbert C. Francis, John B. Youmans, and W. E. Garrey.

2. "Acute Syphilitic Nephrosis," by Drs. White Patton and Marvin Corlette.

Three cases of acute syphilitic nephrosis are reported with detailed observations of their acute illness and the subsequent course of two of them for approximately two years.

Previous work relative to the pathological nature of this condition is briefly reviewed. The varying degree of severity of this condition as it occurs in adults is emphasized. The milder forms of this condition may well escape the attention of the patient as well as the physician and may in part account for the apparent rarity of the syndrome.

This paper was discussed by Drs. Hugh Morgan, J. C. Peterson, and E. W. Goodpasture.

3. "The Results of Recent Studies of Hookworm in Eight Southern States," by Drs. W. S. Leathers and A. E. Keller.

This paper deals with the incidence, distribution, and intensity of hookworm infestation in Tennessee, Mississippi, North Carolina, South Carolina, Kentucky, Florida, Alabama, and Georgia during the period 1930-1938. The study is based on the examination of feces by the Stoll dilution egg-counting method. The paper includes for comparative purposes the data obtained by the Rockefeller Sanitary Commission in the same areas during the period 1910-1914. In the states for which information for the two periods is available the data indicates a substantial decrease in the prevalence of hookworm.

This paper was discussed by Drs. H. E. Meleney and Paul D. Lamson.

COMING MEETINGS

American Association of Anatomists, Louisville, Kentucky, March 20-22. Dr. E. R. Clark, Department of Anatomy, University of Pennsylvania School of Medicine, Philadelphia, secretary.

American College of Physicians, Cleveland, April 1-5. Mr. E. R. Loveland, 4200 Pine Street, Philadelphia, executive secretary.

American Society of Biological Chemists, New Orleans, April 13-17. Dr. C. G. King, Department of Chemistry, University of Pittsburgh, Pittsburgh, secretary.

American Medical Association, New York, June 10-14. Dr. Olin West, 535 North Dearborn Street, Chicago, Illinois, secretary.

Arkansas Medical Society, Fort Smith, April 15-17. Dr. W. R. Brooksher, 602 Garrison Avenue, Fort Smith, secretary.

Georgia Medical Association, Savannah, April 23-26. Dr. Edgar D. Shanks, 478 Peachtree Street, N. E., Atlanta, secretary.

Louisiana State Medical Society, New Orleans, April 22-24. Dr. P. T. Talbot, 1430 Tulane Avenue, New Orleans, secretary.

Mississippi Valley Medical Society, Hotel Fort Armstrong, Rock Island, Illinois, September 25, 26, 27. Dr. Harold Swanberg, Quincy, Illinois, secretary.

Southern Medical Association, Louisville, Kentucky, November 12-15. Mr. C. P. Loran, Empire Building, Birmingham, Alabama, secretary.

Tennessee State Medical Association, Chattanooga, April 9-11. Dr. H. H. Shoulders, 508 Doctors Building, Nashville, secretary.

West Tennessee Medical and Surgical Association, Jackson, May, 1940. Dr. George R. McSwain, Paris, secretary.

Middle Tennessee Medical Association, Spring Hill, May 16. Dr. Fowler Hollabaugh, Nashville, secretary.

Region I of the American Academy of Pediatrics, Mayflower Hotel, Washington, D. C., April 4-6.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By HUGH BARR, M.D.
Medical Arts Building, Nashville

Prevention of Ignition of Anesthetic Gases by Static Spark. Woodbridge, Horton, and Connell. *Journal of the American Medical Association*, August 16, 1939.

A fatal anesthetic explosion which occurred in Boston in October, 1938, while cyclopropane was being administered initiated an investigation. It was found that the usual precautions had been taken, such as grounding all parts of the gas machine, patient, and operating table. The relative humidity was between sixty and sixty-five per cent, no electrical appliances except the floor and ceiling lights. The floor was of terrazzo with embedded brass grids. The anesthetist sat on a metal stool with rubber feet, which was covered by a sponge rubber pad finished with feltlike cloth protected by fabricoid. The surgeon had just finished and walked to a corner of the room when the explosion occurred.

At a later date duplicate conditions were arranged and with the use of an electrostatic voltmeter the magnitude of electrical charges were measured. It was found enough electrical charges to cause an explosion were produced by the anesthetist sliding on his stool, a draft of air, movement of persons, moving blankets, linen, and even silk garments, also the removal of the mask. The authors devised a method of removing the electrostatic potential between two objects by interconnecting all objects and persons with conductors with each other and all these to a conducting floor. They submit an elaborate diagram illustrating this method. While this is not claimed to be a panacea yet it will go a long way to eliminate static sparks.

DERMATOLOGY

By E. E. BROWN, M.D.
Doctors Building, Nashville

Prevention of Industrial Dermatitis with Reference to Protective Hand Creams, Soap, and the Harmful Role of Some Cleansing Agents. Joseph V. Klauder, M.D.; Elmer R. Gross, M.D.; Herman Brown, B.S. *Archives of Dermatology and Syphilology*, February, 1940.

Cleansing agents applied to the skin as the cause of industrial dermatitis are discussed. The results

of the different methods used by employees in cleansing their hands are presented. They emphasized the importance of mechanical devices in the prevention of industrial dermatitis as well as the need of education of the workmen, industrial engineers, and foremen in preventive measures, in using harmless methods of cleansing the skin.

Protective applications with several formulas, consisting of greasy and nongreasy preparations, also those that leave a dry film, are given.

Harmful as well as harmless methods of cleansing the skin are discussed. The action of soap on the skin, including mechanics soap and its ingredients, toilet soap, neutral soap, soaps used for household and laundry purposes, soap fillers, silicates of sodium, allergenic action of soap, and soaps as a primary cutaneous irritant, are discussed.

Detergents other than soaps, as sulphonated oils, gelatin and liquid petrolatum, and one containing sodium lauryl sulfate, are discussed and proposed as substitutes for soap.

OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.
Suite 234 Doctors Building, Nashville

Placenta Circumvallata. John E. Hobbs. American Journal of Obstetrics and Gynecology, Vol. 39, p. 39, 1940.

Although during the past sixty years much investigation has been done in the study of placental pathology, many questions are still unanswered and much information is yet to be obtained. Placenta circumvallata may be defined as an abnormal development of the placenta, characterized by a restricted growth of the chorionic plate, with oblique growth of its marginal villi into the surrounding decidua vera to form an extrachorial margin of placental tissue around part or all of its circumference. The membranes which insert into the edge of the plate become reduplicated and form a fold lying on the plate and constitute a wall of varying thickness around it. Williams, who studied some thirty cases of term and near term specimens, states: "... upon going over the clinical histories of patients presenting the abnormality, my impression is that it is practically without clinical significance."

From a study of this series of 150 cases of placenta circumvallata, the author concludes that the occurrence of this abnormality is much less frequent than most writers have stated. As a result of confusion in terminology and lack of definite criteria for identification, many cases of marginal infarction, etc., have been reported as cases of circumvallation. The incidence of the anomaly in our series is .8 per cent. It is of considerable clinical significance. It frequently terminates in an abortion (twenty-two per cent). It often causes premature labor (sixteen per cent). The mortality is high (thirty-three per cent). Painless bleeding,

which occurred before the onset of labor, happened in twenty-two per cent of the cases. When the bleeding appeared during the last trimester of pregnancy it was mistaken for placenta previa in some instances. In cases of hydorrhea gravidarum this abnormality should be suspected.

OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.
Doctors Building, Nashville

Chemotherapy of Sulphanilamide in Ocular Affections. Mario Meoni. American Journal of Ophthalmology, February, 1940.

The use of sulphanilamide in ophthalmology is reviewed by the author and the effect of sulphanilamide in experiments carried out on rabbits is described. Following an Elliot trephining, rabbits were inoculated with (1) staphylococcus aureus, (2) staphylococcus albus, (3) staphylococcus citreus, and (4) bacillus pneumoniae of Friedlander. The eyes reacted to the inoculations and prontosil was instilled in the infected eyes. The chemotherapeutic action of sulphanilamide used by local application was found to be very successful in aiding resolution of the infective processes. Intraocular infections were also produced in rabbits' eyes, and prontosil proved to be very efficacious in controlling the infection. The author cites eight clinical cases in which prontosil was used and concludes that the drug was undoubtedly of great benefit in the various ocular infections, but he believes that the usual local therapy should be carried out in addition to the sulphanilamide therapy.

The Effect of Various Concentrations of Pilocarpine on Intraocular Tension. S. I. Rossel. American Journal of Ophthalmology, February, 1940.

Study of forty-four glaucoma patients and five normal persons indicated that strong solutions of pilocarpine exerted no effect on normal eyes, that .5 to three per cent solutions affected the glaucomatous eye in equal degree, and that six per cent solutions had a more profound effect on intraocular tension after weaker solutions had failed.

PEDIATRICS

By JOHN M. LEE, M.D.
Doctors Building, Nashville

Vitamin K for the Pediatrician with Special Reference to Physiological Hypoprothrombinemia of Newborn Infants. Arthur M. Grossman, M.D. The Journal of Pediatrics, February, 1940.

This is an exhaustive and critical review of the literature concerning vitamin K, its history, source, action, and mode of administration. Also studied were the writings on prothrombin, technique of test for prothrombin determination, hemorrhagic disease of the newborn infant, physiologic hypoprothrombinemia of the newborn infant, factors re-

responsible for hypoprothrombinemia of the newborn infant, methods to eliminate neonatal hypoprothrombinemia, intracranial hemorrhage of the newborn infant, and hypoprothrombinemia in other neonatal conditions.

From this study the author derives the following summary and conclusions: "A new vitamin has recently taken its place among those substances destined to alleviate human suffering. This is known as vitamin K.

"Vitamin K is absorbed in the normal intestinal tract, in which there is sufficient bile, and synthesizes prothrombin in the liver. A hypoprothrombinemia exists in all instances in which bile is prevented from reaching the upper intestinal tract. Given in conjunction with bile salts, vitamin K will restore a low thrombin concentration and prevent possible hemorrhage due to this cause.

"A definite hypoprothrombinemia occurs in normal infancy between the second and fifth days following birth. This accounts for the delayed bleeding and coagulation times encountered during this period. Because hemorrhagic disease of the newborn infant occurs most frequently during this period, the physiological hypoprothrombinemia may be the responsible factor. It has been shown that the administration of vitamin K to both mothers and newborn infants will prevent the usual low thrombin concentration.

"Intracranial hemorrhage of the newborn infant may be associated with the neonatal hypoprothrombinemia, and it is suggested that the prophylactic administration of vitamin K will lower the incidence of these hemorrhages.

"Vitamin K therapy is indicated in all surgical cases of less than one week of age. Hypoprothrombinemia associated with hemorrhagic disease of the newborn infant, intracranial hemorrhage, icterus gravis neonatorum, anemia neonatorum, and hydrops congenitus will respond to vitamin K therapy. Any disease characterized by an interference with the normal output of bile or destruction of intestinal mucosa deserves trial with vitamin K.

"The suggestion is made that hemorrhagic disease of the newborn infant and its associated bleeding tendencies be classified as a vitamin deficiency disease due to a lack of vitamin K."

ROENTGENOLOGY

By FRANKLIN B. BOGART, M.D.
Medical Arts Building, Chattanooga

Roentgen Therapy in Acute and Chronic Otitis Media.

J. P. Brown, L. L. Titche, W. E. Lawson. *American Journal of Roentgenology and Radium Therapy*, Vol. 42, No. 2, p. 285, August, 1939.

While this form of therapy has been occasionally used, it has never been used extensively, probably because the ear was considered as a closed rigid wall cavity. This is not true since the eustachian tube gives it a communication with the outside.

The rationale of the treatment is well founded. The destructive effect of X-rays on leucocytes, par-

ticularly lymphocytes, is well known. Phagocytosis is accelerated, probably as a result of the destruction of lymphocytes.

The technique employed has varied, but eighty-five kilovolts has usually been employed with no filter or with one millimeter aluminum filter. In mild cases in infants, fifty or sixty r have been given, and in older children and adults from sixty to 100 r. There has been considerable variation in the interval between treatments. In acute catarrhal otitis media one treatment has usually been all that is necessary. In acute purulent otitis three to seven days elapsed between treatments. In chronic otitis media about ten days elapsed between treatments.

In determining whether or not roentgen treatments alone are to be used rather than to precede the roentgen therapy by myringotomy in acute otitis media, the following criteria are used: (1) if the temperature is not over 99.6; (2) if there is bulging of the drum with obliteration of the short process.

SUMMARY

In summing up this series of cases the most pronounced result of roentgen therapy in otology is the effect in cases of acute catarrhal otitis media. It is striking to observe how quickly the pain is relieved following the application of these rays, and in from two to three days the drum membrane is normal. In cases of acute purulent otitis media, pain is relieved in a few hours, but the most useful effect of roentgen therapy is that the discharge, instead of continuing from four to six weeks following myringotomy or perforation, clears up in about a week. In chronic purulent otitis media we have a useful adjunct to our therapy. Instead of mastoidectomy it now seems that a short series of roentgen treatments will suffice to bring about an ear that is not only dry and free from pain, but one in which hearing is fairly normal. None of our cases has shown any complication following this mode of therapy.

SURGERY—GENERAL AND ABDOMINAL

By BATTLE MALONE, II, M.D.
1400 Monroe Avenue, Memphis

The Rammstedt Operation for Pyloric Obstruction in Infants. Harry E. Knox, M.D. *Surgical Clinics of North America*, December, 1939.

This clinical entity has been recognized since 1777, but our present-day understanding of it was given by Hirschsprung in 1887. Several operations were devised, but the one used exclusively today was initiated by Rammstedt in 1912.

"Congenital hypertrophic stenosis" describes the pathology. There is hypertrophy of the longitudinal and circular muscle fibers of the pylorus, causing the lesion to appear as an olive-shaped tumor often three times the size of a normal pylorus, and the overlying peritoneum is smooth, glistening, and of a grayish-white color. The tumor is of cartilaginous consistency. The lesion is more frequent in boy babies. The exact etiology is unknown.

The usual symptoms are projectile vomiting, scanty urinary output, constipation, loss of weight, and visible gastric peristaltic waves. The vomitus is often cumulative in type and never contains bile. A palpable may or may not be present. X-ray examination is considered neither desirable nor helpful in making the diagnosis. Pylorospasm congenital duodenal adhesions and gastroenteritis must be differentiated from stenosis. In pylorospasm, the onset is less rapid, vomiting occurs several days after birth, the vomiting may be bile stained and the symptoms subside under proper medication. With congenital adhesions, vomiting begins immediately after birth, is at first only regurgitated, then becomes projected and cumulative. The presence of bile in the vomitus suggests that the obstruction is beyond the pylorus. In gastritis, the vomiting comes on at frequent intervals, is small in amount, and may contain bile. There may be also fever and diarrhea. Occasionally in the doubtful case X-ray examination may be helpful.

Medical treatment should be used only in doubtful cases and even then should not be too prolonged. It consists of administration of thickened cereals and antispasmodic drugs. Preoperative preparation includes giving saline and glucose solution by hyperdermoclysis and infusion, small frequent whole blood transfusions, and keeping the infant warm with hot-water bottles or in a heated crib. Open-drop ether is the anesthetic of choice. Through an upper right rectus muscle, splitting incision two inches long, the pyloric tumor is delivered and incised longitudinally in a bloodless area. The fibrotic muscle is carefully spread with mosquito forceps until the mucosa herniates through. Bleeding points are ligated with triple-O catgut and care is taken to see that all muscle fibers are separated. The abdomen is closed in layers. On return from the operation room the infant is placed in a heated crib, the head of which is lowered. In three hours small amounts of water are allowed at half-hour intervals, gradually increasing the amount and adding breast milk to the feedings. A routine chart for postoperative feeding is outlined.

The mortality rate is steadily decreasing and nearly all patients recover. The usual causes of death are unrecognized small vessels which continue to bleed, peritonitis from perforation of duodenum, shock, sound avulsion, and uncontrollable gastroenteritis.

UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.

By G. A. WILLIAMSON, JR., M.D.
Medical Building, Knoxville

The Influence of Testosterone-Propionate Upon Benign Prostatic Hypertrophy and Spermatogenesis: A Clinical and Pathological Study in the Human. Norris J. Heckel.

For this study twenty-two unselected patients, with a history of urinary difficulty and clinical and physical findings of benign prostatic hypertrophy, were observed.

The testosterone-propionate was given intramuscularly in daily injections of from five to thirty milligrams. The treatment was continued for four to fifty-six weeks.

The ages of the patients ranged from fifty-eight to ninety-one years, with an average of about seventy-one years. The prostatic hypertrophy ranged from one plus to four plus. In nine the residual urine ranged from 100 cubic centimeters to 500 cubic centimeters; in thirteen the residual was less than 100 cubic centimeters.

Two of the cases developed acute retention while under treatment. Three showed slight improvement of day frequency, and three slight improvement of nocturia. Six showed very slight sexual improvement. There was no noted change in either the residual urine present, or change in the size of the prostate.

Nine cases of the group later had a transurethral prostatic resection. Microscopic sections of the treated cases were compared with sections of untreated ones. No histological changes were found in the treated cases to distinguish them from the untreated.

Fifteen patients were observed for the effects of the injection upon spermatogenesis. Ten of these showed a marked decrease in the spermatozoa as a result of the treatment. The depletion of spermatozoa, although definite, was apparently only temporary.

This author concludes by stating that these data would indicate that this material is of little benefit in the treatment of benign prostatic hypertrophy, and its promiscuous use over a long period of time in patients, with normal testicular function, might be harmful.

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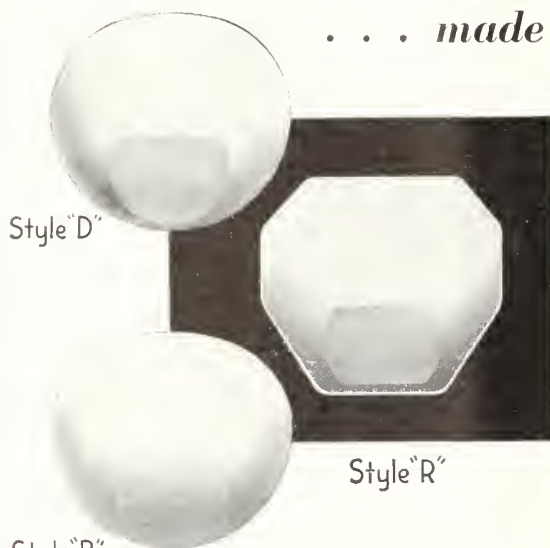
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THE RESTORATION OF FUNCTION AFTER INJURY WITH SPECIAL REFERENCE TO EXTREMITIES*

DUNCAN EVE, M.D., Nashville

FOLLOW-UP care of fracture cases is as important as the reduction. Deformity and disability will occur in many cases on account of too little attention after the reduction. Therefore, have frequent X-rays and, if necessary, correct any angulation of the fragments early. There is no definite rule for the period of immobilization, as every case is different and the time depends upon the age of the patient and the type of the fracture. Naturally children's fractures require a short period of time, whereas union is slow in elderly patients and in infected fractures.

Physical therapy has been used very extensively for many years in the treatment of various disabilities which followed wounds both with and without fractures.

Satisfactory functional results should always be expected if a good reduction is obtained, if there is not extensive damage to the soft parts, and if immobilization is not maintained for too long before movements of the affected muscles and joints are begun. In rare instances, function will be impaired when all these objects have been accomplished, but this is more often true with compound fractures followed by infection or with massive damage to the adjacent soft parts. The resulting period of disability can often be greatly shortened and the end result be improved in these complicated

cases by the proper application of physical therapy.

Examples of the physical therapy usually used are:

1. Rest.
2. Heat.
3. Massage.
4. Active and passive movements.
5. Electric stimulation.
6. Exercising apparatus.

Rest is the most important single principle to be followed.

Movement is most important in the restoration of the joint and the muscles.

The greatest aid in rehabilitation is for the workman to resume work of a lighter character than his usual job and gradually approach the same duties which he did prior to the accident. Such is the best type of physical therapy to the majority of traumatic cases because they get normal muscular activity and in a short time the patient has confidence in himself.

When to begin active and passive movements depends upon the location of the fracture and the age of the patient. In children the joints can be immobilized for a few months without permanent limitation, whereas in adults with immobilization of a joint for eight weeks frequently they will have permanent limitation of motion.

As regards passive movements, anything like forcible movements defeats the object and will produce some degree of irritation

*Read before the Tennessee State Medical Association, Jackson, April 11, 12, 13, 1939.

of the involved joint and often results in more stiffness.

Functional treatment as soon as possible is the greatest aid after reduction because motion will lessen the stiffness of the joints, atrophy of the muscles, and swelling, and with patients who continue the use of the extremity while the fracture is healing, rehabilitation is not required. The degree to which this is possible will depend, however, upon the type of dressing for immobilization which is applied.

I will quote two cases of Dr. B. H. Stimson which will illustrate the importance of active movements:

"Two women slipped and fell on icy sidewalks, landing on their outstretched right hands. Both had Colles' fractures. Both went to the same doctor and examinations and X-ray plates of each were the same. They received the same treatment of immediate reduction and immobilization with splints for the same period of time. One woman was the wife of a laborer with five children to look after. From the first day she was moving her fingers. She had complete confidence in her doctor and obeyed all instructions. She had a perfect result.

"The other woman was a society matron whose occupation was holding cards every day at bridge. She had a maid and refused to help herself in any way. When the splints were removed the fingers were swollen, stiff, and painful. She began to have 'electric treatments' and expected the treatments to do all the work, and she could not understand why her wrist and fingers remained sore and stiff for weeks."

Active movements are always preferred to passive movements. The patient can always perform active movements.

In case physical therapy is required the patient should never be referred to the technician until union is fairly firm.

Practical restoration exercises for the upper and lower extremities.

Fingers.—Encourage early use of the fingers by such exercises as squeezing a sponge, rubber ball, wringing a wet towel, playing a piano, and newspaper exercises, by crumpling a newspaper until it is a small wad, several times a day, unaided by

the other hand. The application of heat is also of value, and many of the exercises mentioned here, as with fractures near any joint, can be carried out in a hot bath, or with sun baths or other forms of external heat as an adjuvant.

Wrist Joint.—Regardless of the type of immobilization used, it should permit free movements of the fingers and full movements of the shoulder and elbow should be insisted upon throughout the treatment. In patients past middle life when using a sling for any length of time always advise exercise of abduction and rotation to prevent stiffness of the shoulder joint after immobilization of the wrist injuries. Advise the following exercises: squeezing a sponge, washing dishes, wringing a wet towel, newspaper exercise, and lifting an object just off of the floor, rotating it rapidly to the right and left. Such exercises will improve supination and pronation.

Elbow Joint.—Prompt reduction will always shorten the period of disability. After fractures of the elbow in children very light active motion should be advised early. It can be begun the second or third day and is far more valuable than massage, manipulation, or any other form of treatment. However, it is important to avoid movements which produce pain as properly applied movements without pain and without affecting the position of the fragments will prevent subsequent stiffness.

Immobilization of the Elbow.—Adhesive plaster dressing applied in children correctly causes fewer complications and produces earlier restoration of function than plaster Paris.

Impaired motion following elbow fractures is frequently often due to adhesions to the soft parts and ligaments, the fragments not correctly reduced, or to bone block from excess callus.

For restoring flexion and extension of the elbow there are various exercises: i.e., carrying a bucket of water, dumbbell, or any object which weighs from five to ten pounds or more. Also "chinning" rings on the trapeze bar, combing the hair, and setting-up exercises.

Treatment of the elbow fractures depends

upon the type of fracture and age of the patient. Union usually requires from three to four weeks, but restoration of function very often requires continuous exercising for several months and in the severe cases and with patients that do not cooperate, physical therapy is valuable. Limited motions due to adhesions of the soft parts should be gradually stretched by exercising and occupational therapy.

Shoulder Joint.—After shoulder injuries there is usually impaired abduction of the arm due to atrophy of the deltoid muscle and weakness of the external rotators.

With impacted fractures of the humerus there is only partial disability and union occurs in about four weeks. If immobilization is prolonged over four and one-half to five weeks with such fractures there may be permanent disability due to arthritic changes. Motion should be started usually in two or two and one-half weeks and should continue for several weeks after the immobilization has been removed. The best method for exercising any shoulder injury is a pulley over the frame of a door, through which a clothline is passed, the ends being opposite the patient's shoulders. The patient's back should be against the closed door to force external rotation as the affected arm is raised.

When a fracture of the shoulder is immobilized by a plaster spica, in the third week or less the upper part of the plaster over the arm and forearm should be removed so as to permit early active movements. After the removal of the entire immobilization, then can be begun the pulley exercises, "wall-crawling" exercises, and circumduction motion of the arm.

Patients frequently are able to abduct the arm when lying down, but not when standing up. Patients should be instructed to be in bed and abduct their arms and, after obtaining some power of abduction, then begin the exercises already described.

Lower Extremity.—With prolonged immobilization of the knee joint many patients will develop weakness and stiffness of the muscles, joints, and ligaments, and occasionally, atrophy of the quadriceps. Patients should be encouraged early to exer-

cise the toes and contract the quadriceps and, if possible, to begin active raising of the limb. Such will prevent atrophy of the joint cartilage, atrophy of the quadriceps muscle, and adhesions of the patella, in spite of many weeks of immobilization of the knee joint. Such treatment is far better than massage.

In the treatment of fractures of the patella or about the knee joint, an iron walking heel can be embedded in the cast and the patient allowed to begin walking on crutches ten days to two weeks after reduction. The same appliance may be used with fractures of the bones of the leg.

Marked stiffness of the knee joint can be overcome by the patient in bed with a small hammock under the popliteal space and a pulley above the bed. Also a patient can use a table with the flexed knee at the edge of the table and gradually stretch the rigid muscles, thickened ligaments, and fibrous adhesions. Other methods are: climbing the stairs, bicycle riding, and swimming. All are good exercises for the knee joint.

Lower Leg and Ankle Fractures.—After reduction and immobilization early exercises of the toes and active raising of the limb should be encouraged. The limb should be kept elevated from four to seven days after the reduction. The writer has been using an iron walking heel embedded into the cast since 1922. Patients are allowed up on crutches and gradually apply more weight every few days. Use of the iron heel allows muscle activity, restores normal circulation, prevents bony atrophy, fibrous adhesions, arthritic changes, and allows many patients to return to some type of work in a few weeks.

After immobilization the usual case requires hot baths, and the ace bandage is useful. Some cases require strapping with adhesive plaster.

After extensive injuries of the ankle or foot, instruct carefully re-education of walking before full weight bearing is permitted. A shoe which provides good support should be used to prevent foot strain.

Often the inner side of both heel and sole of the shoe should be slightly raised, this

taking the strain off of the ligaments on the inner side of the foot and preventing traumatic flatfoot. A Thomas' heel can be used for the same purpose.

CONCLUSION

It is surprising how subsequent stiffness is avoided if very light exercise or motion is begun early.

Passive movements and massage in all acute fractures and diseases are harmful.

Physical therapy has a place, but should be used in the right place and at the right time.

DISCUSSION

DR. WILLIAM J. SHERIDAN (Chattanooga): Mr. President and Members of the State Society: It is always a pleasure to hear one of Dr. Eve's papers because they are so practical, but he picks the bone so clean that it makes it rather difficult to discuss such a paper.

I think the average surgeon is apt to lose sight of the fact that the restoration of function is the entire problem at hand when we take charge of a fracture. Certainly the after result should be taken into consideration at the moment you first see the patient. Your entire scheme of treatment should be so planned that at least you are not going to add to, contribute to, the amount of disability by any manipulation which might do further injury.

I think it is very important to allow as much motion as possible in the neighboring joints except those joints on each side of the fracture. If this is done, you will find that a great deal of after-care is not necessary after your casts or splints or other appliances are discarded. In forearm fractures and wrist fractures, if we will only stop long enough to think that a great deal of the impaired motion in the wrist is caused, not so much by the immobilization of the ligaments in the wrist as by the numerous tendons which pass over the wrist joint, that the majority of these tendons are going to the fingers, and that if in immobilizing the forearm the fingers can be left free, we will run much less chance of having adhesions about those tendons and we will have a good motion when the splints are finally discarded.

The same thing applies to the elbow. If, in immobilizing the elbow, the fingers and shoulder joint are left free, if the patient is encouraged to exercise not the joints immediately at the site of the fracture (of course that is immobilized) but of the wrist and of the shoulder, you will have very little difficulty in the average case of mobilizing the elbow after the treatment is discontinued. There is no exercise, there is no heat, there is no electrical machine, in my opinion, that will take the place of motion and use of the part as soon as it is reasonably safe to do so.

As regards the ankle and foot and lower leg

fracture, and the knee fractures, I think that the best thing you can do to restore motion is to put that patient walking on that extremity, as Dr. Eve has already told you, as soon as possible. This may be done in plaster. We usually protect the plaster by some kind of walking iron, and as soon as it is safe for that patient to bear weight, the sooner you put him on it, the sooner you throw his crutches away, the sooner the muscles will begin to come back, the loss of strength will not be there, and the final result will be much better.

In fractures in and about the foot, when the cast is discarded, you will find the foot muscles and ligaments are weak. If you will immediately put a Thomas' heel on the shoe, or better still, I think, put an arch support in the shoe and put that patient back to walking, you will find that he will clear up much sooner.

I certainly have enjoyed your paper, Dr. Eve. All I have done is to try to re-emphasize some of the points you have already made, and still I don't think there are any of us here that like to see a child with a fractured elbow.

DR. E. DUNBAR NEWELL (Chattanooga): I am very happy to have heard this paper of Dr. Eve's. I agree so fully with what he said about the treatment.

Personally, I rarely ever use physiotherapy. I think if you will not immobilize your joints too long and will have the patient move them early, active motion will take the place of all the physiotherapy. I rarely ever use passive motion except to a very, very limited extent, and then in the beginning. I think active motion is what we should all use.

To illustrate what I mean, formerly in bad fractures of the os calcis most of the textbooks would teach us that it was a fracture that was permanently disabling, and certainly it took from six months to a year to get good functional results. In our treatment of the os calcis now, after a reduction which we try to get as perfect as possible, we put these patients in a plaster cast with a walking iron heel, with a support—as Dr. Sheridan said, an arch support—and we have these men walking in thirty days, and we have a great many of them back at work within three months with practically no disability, and if you can do that with a fractured os calcis, which was considered at one time as a most disabling fracture, why cannot you do it with other fractures?

Dr. Eve brought out that you should not immobilize a knee more than two months unless it is a child. I agree with him about that. You must not immobilize that knee more than two months if you do not expect a permanent ankylosis. We try our best to put these patients, as we did during the war, in the walking caliper, and it is a very simple thing. You can have your blacksmith get a Thomas splint and fix it into a heel, and any harness maker can fix it up, and instead of spending twenty-five or thirty dollars for a fancy walking

caliper you can have one made for five dollars which is just as effective, and give the patient an opportunity to bear weight, because, after all, bearing weight and use of the muscle is the most effective thing.

What Dr. Eve brought out so forcibly about the two women is certainly true: never let those patients with a fracture of the wrist joint carry that arm in a sling except for the first forty-eight hours, and I never do. I never allow them to carry it in a sling except for the first forty-eight hours. I insist that they use their fingers all the time, and when they take their splint off they have almost perfect function with no pain or disability in the great majority of all cases. Formerly, you remember, we insisted you should not use it; you should carry it in a sling. That is all bosh! You should not carry it in a sling at all. You should have use of the muscles of the elbow and shoulder joint. It doesn't make any difference how old a woman is if you will insist that she does not carry the arm in a sling; of course, it is very necessary to get perfect apposition. We consider that you have perfect apposition, because if you don't have it you are not going to get perfect results. But if you will get perfect apposition in a Colles' fracture, and then not carry it in a sling, you will get a permanent result in the great majority of all cases, provided you have a fracture just of the radius and not a fracture of the ulna also, which is a little different.

In our practice we practically use no artificial splints of any kind except a Thomas' splint. We use plaster for splints and make the splint to fit the fracture or dislocation, and we don't have any expensive apparatus of any kind. We don't use them; we don't think they are necessary. We have no physiotherapy department. Personally I think it is mostly humbug. I don't think there is much to physiotherapy. Let the patient do his own physiotherapy and start that patient back to work in the same kind of work he is accustomed to. He will be much more interested, he will use his muscles earlier, and he will get a much better and quicker function than he would by all the physiotherapy in the world.

DR. S. R. MILLER (Knoxville): I want to express to Dr. Eve my appreciation of his very timely, practical paper. I believe that the average practitioner who only rarely sees a case of fracture keeps his cast on too long, and in fact those of us who see a good many fractures keep them on too long.

Concerning Dr. Eve's remarks about getting them to do active exercise and use of the limb, you have to suit yourself to each case. One patient will do one thing and won't do another, and so another and so another. Dr. Eve's referring to his case reminds me of a fracture that I had of a woman about sixty with plenty of servants at home who fell on a stairway in New York just as she was starting home and had a bad comminuted fracture of the head of the radius. I saw her a little more than twenty-four hours after injury. There were numerous fragments; one almost punctured the skin.

We got a pretty good "set," and when we took the dressing off we could not get the woman to do a thing. We tried to get her to pick up her hat. The maid did that. We tried to get her to use it at the table. She was waited on there by a maid and others. Then I got a Swedish masseuse, and she did the best she could. I used baking and hot applications and so forth. The masseuse came in my office crying and said: "Doctor, I have done the best I could and every time she says she is worse. I don't believe she is worse, but I haven't improved her and I want to quit." I let her do it.

By and by, I found she was fond of the piano. She did more on those piano keys in the first week than all of my treatment and the masseuse's in two months.

I want to warn all of you about fractures of the femur, transverse or almost transverse fractures of the femur shaft. You had better be careful about taking the splint off. Watch it closely, because those three large muscles on the inside, until you get a firm and pretty strong, solid union, will cause that femur to bow out. I have seen a few such cases, so there is one place, Dr. Eve, where you must be careful and watch your case unless you have a splint on and have it strapped firmly. If you just take the splint off and leave it to the patient to help himself in and out of bed and chair you had better watch out or you will have an outward bowing result.

DR. DUNCAN EVE (closing): I certainly appreciate the discussion.

There is just one condition I omitted and that is in regard to using plaster of Paris when immobilizing the lower extremity for several weeks. It is wise, before the patient leaves the operating room, to remove a window along the roof of the cast opposite the knee joint.

Thank you.

THE OPERATIVE CORRECTION OF LOWER EXTREMITY LENGTH INEQUALITY*

C. H. CREGO, JR., M.D., St. Louis, Missouri

LOWER EXTREMITY length inequality is a frequent cause of dysfunction in locomotion and the degree of disability arising therefrom is directly proportional to the amount of difference in leg length. Shortening of an inch or less does not, as a rule, give rise to serious gait disturbance. Individuals so afflicted can usually compensate for their shortening without exerting much effort and without producing undue strain on the low back and hips. If, as is frequently the case, the shortening coexists with a stiff knee or a stiff hip, the patient needs three-fourths to one inch less length on the affected side to properly clear the foot in walking. In certain cases of poliomyelitis, especially those with any degree of abductor weakness and those in whom a brace is necessary to support a flail leg, an inch of shortening is distinctly an asset and not a liability. Consequently it is seldom necessary to resort to surgical procedures when the difference in length is an inch or less.

However, if the inequality happens to be one and one-half inches or more, the resultant disability assumes a much more important role and becomes a major handicap. The individual can no longer hide the difference in length—the limp becomes more pronounced, locomotion becomes more burdensome, and the mechanics of the hip, pelvis, and low back becomes markedly upset, all of which may lead to serious trouble if treatment directed toward equalization is not instituted.

The application of a high lift to the shoe is objectionable. Such a lift is unsightly, its weight, even when made of cork or balsa wood, is a source of discomfort, particularly in paralytics, and in many instances the expense of maintaining such a lift is almost prohibitive. In consequence, many patients will not wear such appliances, instead they

will continue to limp along as best they can or else resort to the use of crutches. Most of these individuals are perfectly willing to submit to major surgical procedures if they can be reasonably assured that their shortening can be overcome. It is with this particular group of cases in which the shortening is one and one-half inches or more and in which other causes of disability such as deformities have been remedied that we are concerned in this presentation.

In the order of the frequency of their occurrence, the causes of marked degrees of shortening are as follows:

1. Poliomyelitis.
2. Severe joint infections.
3. Congenital malformations.
4. Osteomyelitis in or near epiphyseal lines.
5. Overriding fractures of the long bones.
6. Fractures through the epiphyseal lines in growing children.

In addition to the above-named conditions which produce shortening on the affected side there are a few conditions which produce abnormal lengthening on the affected side. Among the more common causes of abnormal lengthening of extremities may be listed:

1. Congenital regional overgrowth of the bones of the lower extremities, so-called partial gigantism.
2. Congenital hemihypertrophy of one entire half of the body.
3. Osteomyelitis near enough to an epiphysis to stimulate instead of retard growth.
4. Fractures close enough to an epiphysis to stimulate instead of destroy growth.
5. Overpulling of spiral fractures with too much traction.

However, regardless of the cause of inequality and regardless of whether the extremity is too long or too short, it is the difference in leg length that produces the disability and it is this difference in leg length that must be overcome if treatment is to be at all successful.

*Read before the Tennessee State Medical Association, Jackson, April 11, 12, 13, 1939.

A review of the literature on the subject reveals the fact that as far back as the turn of the present century, attempts to equalize the length of the lower extremities by operative procedures have been made. Stimulation of growth at the epiphyses by the introduction of ivory pegs or other foreign material has been uniformly unsuccessful in accomplishing the desired results and has long since been abandoned. Operations on the bones which aim at either shortening of the sound extremity or lengthening of the shortened extremity have been attempted with varying degrees of success.

In 1905, Godivilla described a method of lengthening of the long bones of the lower extremity which consisted of osteotomy of the shortened bone and traction by a nail driven through the os calcis. In 1912, Freiberg used the Codivilla method with a modified traction apparatus in a boy nine years of age with a fractured femur of five weeks' duration. The shortening of two and one-fourth inches was reduced to one-half of an inch. Magnuson in 1908 published the results of his lengthening experiments on animals. He concluded that from two to three inches could be obtained in a bone as long as the human femur without producing serious injury to vital structures. In 1913, Ombredanne in a case of shortening did an oblique osteotomy of the femur and applied an external screw extension device which was extended from day to day. The gain in length was three centimeters. Taylor and Fassett attempted to lengthen the femur by osteotomy and adhesive traction subsequent to operation, but the results were far from encouraging.

In 1921, Putti published his paper on operative lengthening of the femur and reported the results obtained in ten cases of shortening due to old fractures of the femur. An average lengthening of three to four inches was obtained, but in all cases union was considerably delayed. His contribution, however, proved without a doubt that the bones of the lower extremity could be lengthened as much as four inches without damage to vessels or nerves.

On the basis of Putti's work, Abbott in 1924 originated a method of lengthening

the tibia and fibula which resulted in considerable stimulation of interest in bone lengthening procedures. Before his work, lengthening operations had been largely confined to old fractures of the femur with overriding where the length had at one time been present, but as far as I can determine, Abbott was the first to successfully and repeatedly lengthen, not only the tibia and fibula, but also the femur in cases in which the desired length had never existed.

Aside from a few minor changes in technique, the operation in the main is still performed as was originally described by Abbott. The plan for lengthening the tibia and fibula was, and still is, based entirely on these fundamental principles:

1. That the elastic resistance of the soft parts must be overcome by a gradual and continuous form of traction.

2. That this traction must be applied directly to the bone above and below the site of osteotomy.

3. That this traction must be equal on each side of the leg in order to prevent lateral displacement.

4. That the fixation apparatus also prevent anterior bowing and keep the fragments in contact throughout the lengthening process.

Abbott's original apparatus was designed to do these four things. It was quite crude and complicated and there have been numerous changes aimed at simplification and refinement, but the underlying mechanical principles in our own wire traction apparatus of today are identical with the apparatus used on the first case.

No attempt will be made to describe the various changes in the apparatus. Neither is it necessary to describe all the technical changes that have occurred in the actual operative procedure itself. It is essential, however, to include a description of the operation as it is now done.

In all cases except those with a calcaneus deformity of the foot, the first step in the procedure is lengthening of the posterior tendons around the ankle. An incision is made along the medial border of the tendo achillis with exposure of this structure and

also the posterior tibial tendon and the toe flexor tendons. These tendons are lengthened by the Z-shaped method, after which the foot is put in extreme dorsiflexion in order to obtain as much tendon lengthening as is possible. The foot is then allowed to assume its normal position and the wound is closed in layers with catgut and silk. A second incision beginning about two inches above the external malleolus and extending upward for a distance of about three inches is made over the anterolateral aspect of the fibula. This bone is exposed subperiosteally and an oblique osteotomy is done just proximal to the level of the point where the lower pins are to be inserted. In the same plane and at the same level of the fibular osteotomy, the following soft part structures are completely divided.

1. Periosteum of the fibula.
2. Interosseous membrane.
3. The anterolateral peroneal compartment.
4. The peroneal tendons.
5. The deep anterior and posterior fascia.

After closure of this wound a sterilized apparatus is held in proper position and the four wires are drilled through the upper and lower ends of the tibia, using the apparatus itself as a guide.

Next, a slightly curved incision is made over the anterolateral aspect of the tibia and carried directly to the bone without soft part dissection. The periosteum is separated from the entire circumference of the bone for a distance of about four inches. At the upper and lower limits of the incision, the periosteum of the tibia is completely divided circularly.

After exposure of the shaft of the tibia in the above manner, a Z-shaped osteotomy of this bone is done. The springs on the apparatus are tightened sufficiently to separate the fragments one-fourth inch. The wound is then closed with catgut and silk and drained at its upper and lower angles with rubber tissue drains. These drains are placed between the bone and the periosteum in order to completely drain the accumulation of blood and serum which results from opening the medullary canal. If the skin is closed tightly and a drain is not

used, postoperative swelling will be alarming, but if the skin edges are barely approximated and the wound is adequately drained, postoperative swelling will be of no serious consequence. All wounds are dressed and held in place with bandages and a five-yard roll, and the patient is returned to the bed with the operated extremity elevated about sixty degrees on pillows, using an overhead frame to sling the apparatus.

The drain is removed in forty-eight hours in the operating room, using sterile technique. All wounds are completely redressed, the pin wounds being dressed separately so that they will not have to be removed or disturbed again. The gradual lengthening process is begun sometime during the first week, depending upon the amount of swelling. It is maintained at the rate of one-sixteenth to one-eighth of an inch a day until the desired gain in length is obtained. The approximate time required to gain two inches is three to four weeks. The sutures are removed on the tenth day.

After the lengthening process has been completed, the extremity is held in the apparatus until there is sufficient callus formation to allow removal of the wires without loss in length. This is determined by X-ray and by gradually releasing the spring traction. If there is no loss in length within forty-eight hours after all tension is released the wires are removed and a plaster cast applied. The approximate length of time required for sufficient callus to form is from four to five weeks after the last tightening of the springs. Union is usually adequate enough for weight bearing with a protective brace four to five months after the operation. The patient is then kept in a brace for six months to a year before being allowed free weight bearing.

The results in the majority of instances have been highly satisfactory. The fair and poor results have been cases in whom the procedures should never have been done.

I have purposely avoided the discussion of femur lengthening, but should state that we have done between thirty and forty cases of femur lengthening with a maximum gain of four inches. The principles involved are the same as in the tibial lengthening, but

the technical difficulties are much greater and we personally prefer to add the length below the knee. The only cases in which we now consider femur lengthening are those with an absolutely ankylosed hip. In this type of case, by using well leg traction, it is possible to do a Z-shaped osteotomy of the femur, apply traction in the supracondylar region with the line of pull in line with the fixed upper fragment. In this way it is possible to maintain the position accurately without using a complicated apparatus. The well leg traction method of femur lengthening is not applicable to cases with movable hips, for instead of lengthening at the site of osteotomy, the head of the femur is pulled down out of socket.

With the renewed interest in bone lengthening, there was also a revival of interest in bone shortening and the literature contains numerous reports of successful results following bone shortening. This method of equalization has a definite place in the correction of lower extremity asymmetry of not more than two or three inches. The chief objection to its use is the decrease in total body height which in some patients is of sufficient importance to warrant its contraindication. Another fact is that patients with one crippled extremity are not willing to run the risk of anything happening to the normal side. Both of these objections are perfectly valid reasons for not doing bone shortening operations if other means of equalization can be satisfactorily carried out, but if bone shortening happens to be the only means of equalization open to the patient, the decrease in height should not contraindicate the operation, nor should one hesitate to have his normal extremity shortened. The benefits derived therefrom far outweigh the remote chance of giving the patient two crippled extremities instead of one.

Many different methods of bone shortening have been described in recent years, most of which require some special means of internal and external fixation of fragments after the bone has been shortened. One method is to remove the required amount of bone in one cylindrical segment, approximate the cut ends, and hold them

with metal plates. Another method consists of doing a long oblique osteotomy, allowing the fragments to slide the required amount and then fixing them with either beef bone pegs, autogenous bone pegs, metal screws or removable Kirschner wires.

Many variations of the Z-shaped osteotomy with all types of fixation have been described and in the main uniformly good results have been obtained.

To my mind, a far simpler procedure both from the standpoint of technical difficulty and from the standpoint of adequate post-operative fixation of the fragments is a modified Z-shaped supracondylar osteotomy designed to eliminate bone pegs, metal screws or plates and Kirschner wires. Briefly, the lower four inches of the femur is exposed subperiosteally through an anterolateral approach between the rectus femoris and the vastus lateralis muscles. After the bone is exposed two rows of small drill holes one-fourth of an inch apart are made in the direction of the long axis of the shaft on the anterior surface of the femur. The distal hole in each row should be drilled just below the level of the adductor tubercle and should be so placed that the distance between the distal holes is slightly wider than the diameter of the medullary canal. The succeeding holes in each row should be so placed that the rows will taper toward each other to such an extent that the proximal holes in each row will be about three-eighths to one-half of an inch apart. The length of each longitudinal row of holes should correspond accurately to the amount of shortening desired.

After the holes are drilled, a Gigli saw is placed under the femur at the level of the distal drill holes and the shaft is divided circularly up to the two drill holes. The saw is then shifted to the level of the proximal drill holes and the entire shaft at this level is completely divided. The distal fragment is then tipped up out of the wound and with a very thin-bladed osteotome, the two tapering rows of drill holes are joined. This allows an accurately measured segment of the shaft to be removed and at the same time leaves an anterior tongue of bone on the lower fragment. This tapered tongue

of bone is then inserted into the medullary canal of the proximal fragment. With the knee bent to a right angle, firm blows on the knee with the hand will drive the tongue of the distal fragment into the medullary canal of the upper fragment until the cut edges of the shaft become approximated. Very fine bone shavings from the removed portion of the shaft are packed around the site of osteotomy and after closure a plaster spica is applied. In the average child, walking with apparatus may be resumed in three months; in adults the plaster is not discarded until the end of four months and a protective brace is worn for another two to four months, depending upon the amount of callus.

The thigh muscles adapt themselves very readily to shortening procedures up to three inches with no permanent loss of strength.

In addition to bone lengthening and bone shortening which are applicable alike to both children and adults, there is still another procedure of recent origin which has added tremendously to our means of overcoming lower extremity length inequality in growing children. I refer to the operative arrestment of the epiphyses as advocated and originated by Phemister in 1932. Briefly, his method consists of the operative fusion of one or more of the various epiphyses in the lower extremity. The operation itself is far simpler than either bone lengthening or bone shortening and is effective in stopping longitudinal growth. When the method was first described, the chief difficulty was in guessing at what age to fuse any given epiphysis and how many epiphyses to fuse at a given age to obtain the required amount of retardation of growth. From recent studies in longitudinal bone growth, and from following a large series of cases who have had epiphyseal arrests, the guesswork has largely been eliminated so that at the present time we are able to estimate quite accurately how much longitudinal growth is to be expected from a given epiphysis at a given age. Consequently, this particular operation is being used more and more to replace bone lengthening and bone shortening.

The lower extremity grows from four

epiphyseal lines, the upper femoral, the lower femoral, the upper tibial and fibular, and the lower tibial and fibular. At the upper femoral epiphysis approximately twelve per cent of the growth of the lower extremity takes place. At the lower femoral epiphysis forty per cent of the growth of the extremity takes place. At the upper tibial and fibular twenty-seven per cent of the growth occurs, and at the lower tibial and fibular, the remaining twenty-one per cent occurs. In order to compensate for any desired amount of shortening by epiphyseal arrest, it is necessary, of course, to estimate the amount of growth which is to be expected in the individual. The ultimate total height of the individual has to be estimated by careful consideration of the family characteristics and this one point represents the variable factor in this procedure. After the total additional growth has been calculated one is safe in assuming that approximately fifty per cent will take place in the lower extremity. It is then possible to determine the exact number of epiphyses which should be arrested in order to adequately compensate for the shortening. As an example of this, if a child at the age of twelve years measures fifty-six inches in height and we estimate from a study of his family characteristics that a total of sixty-eight inches can be expected, this means that an additional growth of twelve inches will take place. Since fifty per cent of this will occur in the lower extremity, we know that six inches added length will be obtained. Since forty per cent of this takes place at the lower femoral epiphysis 2.4 inches of the shortening can be compensated for by arrest of this epiphysis in the normal leg. If the upper tibial and upper fibular epiphyses alone are arrested 1.6 inches can be compensated for. As any epiphysis or any combination of epiphyses can be arrested it is quite obvious that as much as eighty-eight per cent of the growth in the lower extremity can be compensated for by epiphyseal arrest alone. The upper femoral epiphysis has not been used for arrestment of longitudinal growth in our experience, as it is not accessible to

such an operative procedure as are the remaining epiphyses.

We have then a choice of three time-tested, recognized, and scientifically-sound procedures for correcting extremity length inequality of severe degree. All three methods have their proper sphere of usefulness and it is not the purpose of this paper to argue the merits of any one procedure to the exclusion of the others. Neither is it within the scope of this discussion to formulate any definite rules as to when, where, and for what each method should be used. The choice of method in any given patient hinges on so many different factors that each individual case is a separate and distinct problem, the solution of which in the last analysis must be left to the judgment of the operating surgeon. In our own clinic we have used and will continue to use all three operative procedures. In every instance we try as best we can to pick the particular procedure or combination of procedures suited to the needs of each individual patient.

Growth arrestment of course is from every angle by far the simplest means of overcoming length inequality in children. The operation itself is easy to do, no post-operative fixation is required, and the period of hospitalization is short. Furthermore, the patient is ambulatory in three to four weeks without apparatus except for a lift which gradually becomes less and less as time goes on.

Bone shortening is technically more difficult and convalescence is more prolonged. The patient must remain in a plaster spica for three to four months and then use a brace for another two to four months. However, the results of the operation are immediate and lifts are no longer required.

The most complicated procedure is that of bone lengthening. Surgically the operation is difficult and highly technical. Extreme attention to detail must be observed personally by the surgeon throughout the entire lengthening process. Unless the operation is done in a hospital where the procedure is thoroughly understood by the nursing staff and the house officers, the surgeon of necessity must make three or more visits a day during the entire lengthening process.

From the patient's standpoint, convalescence is most trying. The lengthening process requires at least three weeks and often four before its completion. The apparatus must remain in place for another four to six weeks before the pins can be removed and plaster applied. Weight bearing can seldom be started under five months and a brace must be worn for another six to twelve months, depending upon the speed of solid union. However, with all its disadvantages, bone lengthening does have a definite though limited use and one should not hesitate to advise it to those patients in whom it is indicated and in whom the other equalization operations are not indicated.

"THE MANAGEMENT OF FRACTURES ABOUT THE ELBOW"*

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OF ALL FRACTURES occurring to the human skeleton there are none that offer such perplexing problems as fractures about the elbow joint. On examination of the records of a charity general hospital, it was found that about ten per cent of patient visits to the hospital were for fractures; of this number twelve per cent were for fractures about the elbow joint; i.e., fractures of one or both condyles of the humerus or supracondylar fractures, fractures of the head of the radius, or of the olecranon. Such a common condition probably exists uniformly in other communities and must of necessity be met and treated by a great number of physicians, not all surgeons by any means.

Fractures are, however, the pet aversion, not only of the general practitioner, but of many surgeons, the reason being that the average physician will not take the time to equip himself with a thorough knowledge of fractures, nor will he exercise the patience and painstaking, time-consuming care necessary for a favorable outcome. Consequently the ultimate results in broken bones are not always what we could expect or could wish. All too frequently the same discontent is experienced by the patient and therefore the frequency of suits for malpractice.

This dislike for fractures in general has not been materially helped with the fact that we have gone to extremes with the invention and production of strange and complicated gadgets, pins, levers, nuts, screws, and springs designed to make the treatment of fractures a mechanical perfection. These implements are not only costly, but require an engineer to assemble them. Most splint rooms in the hospitals, as well as most doctors' offices, contain many dollars' worth of implements bought for one patient, employed once, often unsuccessfully, and discarded thereafter. In the hands

of the originator of these apparatus, they may work well, but usually result in confusion and defeat with others. The doctor and not the apparatus is responsible for the results. In the treatment of fractures we must be equipped to do so under any conditions. Special splints for special fractures are desirable and often necessary, yet the simpler methods of reduction and fixation in the long run in the greatest number of hands, and in the greatest number of patients will give the greatest number of good results.

The purpose of this paper is not to present new ideas for the treatment of fractures about the elbow, but to emphasize the problems that confront the physician in dealing with these fractures which receive but scant attention in textbooks on fractures.

In this analysis of one hundred cases of fractures about the elbow, supracondylar fractures in children were decidedly the most common, there being a total of forty-two cases of supracondylar fractures compared to thirteen fractures of the medial condyle, nine of the external condyle, three T, Y or dicondylar fractures of the humerus, eleven of the olecranon, and twelve of the neck of the radius. The series was completed by ten fractures involving all three bones about the joint. These figures agree fairly well with those of Treves, Wilson, and Ashurst in reporting their series of a greater number of cases.

In analyzing our cases, it was found that the left extremity accounted for sixty-one per cent of the fractures. This may be due to the less muscular development on this side which allows more force to be absorbed by the osseous structures. Falls accounted for sixty-five per cent of the etiologic factors. Automobile accidents were second with nineteen per cent; eighty-six per cent of the fractures were simple; and fourteen per cent were compound. Open operation, whether for a recent or late fracture, was

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done in thirty-six per cent of the total cases. This rather high operative percentage is accounted for by the fact that some of the cases had nonunion, malunion, ankylosis, etc., which required open operation. Closed reduction was done in forty-four per cent, and no treatment was undertaken in twenty per cent of the cases reviewed. This twenty per cent constituted the number that required no manipulation for reduction. Of the thirty-six per cent treated by open operation, the olecranon required open operation the most frequently, followed by the head of the radius, lateral condyle, and medial condyle.

Complications.—Twenty per cent of the cases reviewed presented themselves with some late complications, of which malunion was the most frequent. Of the sixty per cent of the remaining cases, upon which an open or closed procedure was done:

One resection of head of radius required reoperation for an associated traumatic myositis ossificans.

One midcondylar fracture died of coronary embolism just prior to procedures for reduction.

One supracondylar fracture which was treated by closed reduction developed a Volkmann's ischemic contracture.

One compound fracture of all three bones required amputation because of gas gangrene.

One traumatic ulnar neuritis developed following an open operation. Another one developed following closed reduction, in which the nerve became involved in callus. Recovery was obtained after freeing and transplanting the nerve.

This gives ten per cent complications in sixty procedures. No operative death occurred, but there was a mortality rate of one per cent for the entire number of cases.

Supracondylar Fractures. — Practically the mechanism of supracondylar fracture is of little importance. It is only surprising that the injury is as infrequent as it is. Of the total number of supracondylar fractures in our series, only two were in adults. Its relatively infrequent occurrence in adults would seem to predicate its occurrence on a structural weakness due to the

relative strength of the ligaments as opposed to that of bone in childhood. A like structural dissimilarity between children and adults accounts for the predominance of supracondylar fractures to dislocations of the elbow in children and vice versa.

The pull of the triceps tendon serves to maintain the displacement, the proximal fragment usually projects into the cubital space and may cause some injury to the brachial artery or median nerve. This was probably the cause of our case of Volkmann's ischemic paralysis. There is usually some displacement of the distal fragment medially or laterally in addition to the upward and backward displacement due to the control of the lower fragment by the forearm.

In caring for this type of fracture, it is very important to consider the damage to the soft structures about the elbow when seen immediately after the injury. Immediate reduction and fixation rather than temporary splinting and waiting for the swelling to disappear is always the better method. The swelling disappears much more rapidly when the fragments are reduced and held in position. In children, where this fracture is most frequently seen, general anesthesia is more satisfactory than local. Reduction is accomplished usually by extending the forearm and using the second and third fingers back of the distal fragment; traction is made by grasping the forearm and flexing it. Acute flexion is usually necessary to maintain reduction, but avoid forced flexion and keep the forearm pronated to relax the muscles. We have maintained this position satisfactorily by padding the cubital space with a small amount of cotton and applying an adhesive dressing. Fixation is maintained for a period of three weeks in this position, after which the dressing is removed and the arm brought down from acute flexion to right angles and held with a posterior splint. After another week passive motion is started and active motion encouraged. Vigorous stretching and overmanipulation of the joint is strictly avoided, but gentle motion and massage following heat is begun.

It is necessary to keep these patients

under close observation and to keep up physiotherapy until the full range of flexion and extension of the forearm has returned, as patients sometimes feel that a poor result has been obtained when a full range of motion is not present when the immobilization is removed.

One cannot be too watchful for excessive swelling following fractures about the elbow. Too acute flexion may not be tolerated. Circulation and sensation of the hand must be watched and, if necessary, the degree of flexion lessened. Occasionally it becomes the part of wisdom to extend the elbow somewhat at the expense of loss of position. Resetting of the fracture can be accomplished later, but a Volkmann's ischemic paralysis is not so easily relieved if at all. As a precaution, it is always wise to carefully test the hand for sensation and motion before beginning treatment of a supracondylar fracture. Open operation is infrequently necessary and usually done only for correction of malunion.

Fractures of the Medial and Lateral Condyles.—Fractures of the medial and lateral condyles of the humerus, like supracondylar fractures, are most commonly seen in children because of the weakness associated with the developing centers of ossification.

Fractures of the Lateral Condyle in children are of rather frequent occurrence. Nine cases in our series. The displacement of the epiphysis may be so slight as to be replaced by closed reduction or require no reduction at all. It is the complete separation, usually accompanied by rotation, with which we are particularly concerned. To quote Morris Smith: "The fracture line usually runs from the capitellum to the trochlea." The displacement is probably accounted for by the pull of the extensor muscles. Such displacement only can be reduced by open operation.

If the fracture is not obscured by swelling, the diagnosis is not difficult. The loose fragment can be felt on the outer side of the elbow and there is a fullness at this point, and a marked lateral instability of the joint. Occasionally, it is necessary to make roentgen rays of both elbows in the

same position to determine the exact extent of the fracture and position of the fragments.

In treating fractures of the external condyle the severity of the fracture and the amount of displacement of the condyle has to be taken into consideration. When the displacement is slight, the fracture may not require any reduction at all; occasionally by closed reduction the fragment is replaced. Complete separation with rotation of the fragment precludes closed reduction. The factors of growth and late results in these fractures in children make it hard to draw conclusions with the results obtained in adults by open reduction and fixation of the loose fragments. The late results of separation of the capitellar epiphysis are occasionally very unfortunate as regards the function of the injured elbow, deformity, and ulnar nerve injury. These end results appear long after the original injury and treatment; there is a tendency to overlook the casual relationships and a failure to appreciate all the factors that enter into a good final result. In dealing with these fractures in children, when there is separation and rotation of the fragment, it is probably best to attempt some means of internal fixation. In the late cases some men are of the opinion that it is better to remove the loose fragment. As excision has no advantage over replacement in any case in children, we think that excision should be discouraged even in the late cases. In these fractures the operation is often difficult, because of the rotation of the fragment at a distance from the joint. Following the operation of fixation a posterior splint or cast with the elbow at right angle flexion and the forearm supinated and the wrist slightly dorsiflexed is sufficient for maintaining the position. It has been our practice to remove the splint after three weeks and begin passive motion; active exercises should be started as soon after this as feasible. The posterior splint is usually employed for support for about six weeks, removing the arm daily for heat, active and passive motion. At the end of six weeks the patient is usually comfortable without a splint for support.

Fractures of the medial condyle with downward displacement are best treated by open operation. In proceeding with this operation, it is well to isolate the ulnar nerve, dissect it free, then the medial condyle and displaced muscles are replaced and fixed. A vitallium nail or beef bone peg is employed to hold the loose fragment to the shaft of the humerus, occasionally a few catgut sutures will be all that is necessary. The ulnar nerve should then be transplanted to a muscle bed in front of the condyle to make sure it will escape traumatic neuritis later on. This transplantation procedure has become routine with us. The same procedure for external fixation and postoperative care, as described for fractures of the external condyle, are carried out.

Fractures of the Head of the Radius.—One of the first important considerations to keep in mind in cases of a supposedly sprained elbow is that there might be a fracture of the radial head. Fractures of the head and neck of the radius were formerly regarded as rare injuries. With the increasing use of the X-ray, it is found that they occur rather frequently—twelve per cent of this series. Most of the time this fracture occurs, complicating severe fractures about the elbow or the upper third of the shaft of the ulna, occasionally complicating a dislocation of the elbow in adults.

All elbows in which a fracture is suspected should be carefully subjected to X-ray examination.

For those fractures with only a crack through the radial head with little or no displacement, the treatment consists of fixation of the elbow in full flexion with supination of the forearm for a period of one month. In order that full motion may be restored to the elbow joint, it is necessary that approximately exact reposition of the fragments be obtained, because the head of the radius rotates on the ulna and capitellum in supination and pronation, and also moves across the capitellum in flexion and extension of the forearm.

The results of conservative treatment in fractures of the head of the radius with a displacement of a segment is poor, because of persistent pain and stiffness and the

later development of a traumatic arthritis. In borderline cases where a small portion of the head is broken off, we may be justified in using conservative treatment until it can be determined whether marked limitation of motion or pain will result. We should not, however, wait until a traumatic arthritis begins.

The broken off fragments should be removed by operation without delay. When the head is comminuted or tilted in such a manner that its surface no longer fits the capitellum, the entire head is removed.

Rotation is encouraged soon after the operation, and flexion and extension of the elbow is started after about one week.

Fractures of the Olecranon rather frequently occur in adults, partly due perhaps to its exposed position at the point of the elbow and the increasing number of side-swiping automobile accidents. This fracture rarely occurs in children because of the relative strength of the olecranon when compared to the lower third of the humerus.

The most common mechanism of these fractures is a fall on a partially flexed and supinated forearm; the strong pull of the triceps muscle against the lower end of the humerus as a fulcrum produces the fracture.

In fractures without separation, immobilization of the arm in a position of partial flexion for a period of four or five weeks is all that is necessary. Where there is a comminuted fracture or a separation of the fragments, the pull of the triceps cannot be sufficiently overcome by any method of splinting, not even with full extension with strappings and pads. Bony union will not be secure, though occasionally remarkably useful arms are obtained from fibrous union with separation of the fragments.

In all instances outside of fractures in approximation, operative treatment is the method of choice. The method employed in our cases was exposure of olecranon through a posteromedian incision, drilling holes through each fragment transversely, approximating the fragments and fixation with a strand of rustless steel wire. A post-operative flexed position of the elbow is desired, but the amount of flexion depends

on the security of the fragments, which is tested before closing the wound.

Intercondylar, T, Y, or Comminuted Fractures of the Humerus.—This type of fracture is quite rare in children, but seen not infrequently in adults as a result of severe injuries either from a direct blow on the elbow or falling on the extended arm.

These fractures are supracondylar fractures with a splitting or comminution of the condyles by the distal portion of the upper fragment, or the ulna. The condyles may be displaced far to either side or rotated; the simple ones may have no separation, the condyles usually being displaced backward.

The fractures of the condyles can be reduced by manipulation with no great amount of difficulty unless there is marked comminution and rotation of the fragments. The real difficulty is in maintaining reduction. It would seem that reduction could be maintained by acute flexion as in supracondylar fractures, but this position forces the ulna between the condyles and separates them. With the exception of those in which the fracture is not complete between the condyles we are compelled to resort to traction or open reduction to maintain position.

Even with open reduction, difficulty is encountered in fixing the fragments in their position. Plates, nails, wire, or any of the means of internal fixation even when acceptable require considerable patience and skill.

Some type of support with traction to the arm undoubtedly is the best method of treatment. Traction in the recumbent position by this method is probably best. However, in order to shorten hospital time, we apply a short body shoulder spica cast with the arm abducted to forty-five degrees, the forearm at right angles to the arm and the hand in moderate supination. The cast is then cut out over the elbow, a bar for traction is incorporated in the arm portion of the cast, then a small Steinman pin is drilled through the olecranon and traction made by fixing this to the bar. This gives a satisfactory pull in the proper direction, still it allows the patient to be up and about.

My opinion is that better results are obtained by traction than by open operation

and fixation in the severe comminuted fractures, and without the added danger of infection when open operation is performed. Traction is maintained from three to five weeks and checked at frequent intervals with roentgen rays. Occasionally it is necessary to give the patient an anesthetic, manipulate the arm and reapply the traction. As soon as the fragments are united, local heat massage, and passive motion is started for restoration of function.

Multiple Fractures and Compound Fractures.—Almost without exception multiple fractures about the elbow are usually compounded and the injury sustained in an automobile accident. These fractures and their management are such a large subject that time prohibits any remarks upon them except to say that as soon as shock has subsided the wound is thoroughly cleansed, dead tissue excised, the bones reduced to their proper position through the compound wound and the extremity immobilized with splints or plaster. Many a forearm and hand can be saved by giving the tissues a chance. If the injury is so extensive with marked comminution of the fragments, we attempt to have healing take place in such a manner that an arthroplasty may be carried out at some future date.

CONCLUSIONS

1. Supracondylar fractures can usually be reduced by closed methods. The position of choice for immobilization is with the forearm flexed. Reduction should be done as soon as possible and the hand closely watched postoperatively for disturbances of circulation. Continued observation after the removal of the immobilizing material is necessary until function is fully restored.

2. Fractures of the lateral and medial condyles require open reduction and internal fixation if there is separation and rotation of the fragments. Transplanting the ulnar nerve is done routinely when operating upon fractures of the medial condyle.

3. Fractures of the radial head usually require excision of the fragment. Conservative management generally gives poor results because of late traumatic arthritis.

4. Fractures of the olecranon with sep-

aration of the fragments require open reduction and internal fixation.

5. Compounded, or multiple fractures of the elbow, will often give a functioning joint if amputation is not done too quickly.

6. In the treatment of any and all fractures about the elbow joint, knowledge plus patience and time-consuming care with the simplest methods of treatment will give the greatest number of good results.

DISCUSSION

DR. A. H. MEYER (Memphis): Mr. President and Gentlemen: I think that Dr. Bagwell is to be complimented on the manner in which he has handled this most comprehensive subject in the limited time that has been allotted. Obviously, the management of fractures around the elbow joint is a large subject, on any one phase of which a man could talk for more than twenty minutes.

In general I agree with all he has said of the manner in which these cases should be handled. There are one or two features from the standpoint of technic and treatment that I do not fully concur in. However, it is a difference of opinion that always makes the world go round. There are also one or two features that I should like to emphasize in the treatment of these cases, and I am sure that the only reason they were left out in his paper was due to the fact of the limited time.

To begin with, I should like to say that in all fractures or suspected fractures of the elbow in children you will be gravely culpable if you do not make X-ray films of the normal elbow. You will gain much from that and you will save yourself lots of future trouble and perhaps lots of future embarrassment. As you know, in children there are many epiphyseal lines around the elbow joint, and to the general practitioner these are extremely misleading, so don't place yourself in the position of calling an epiphyseal line a fracture, and if you make films of the opposite elbow you won't put yourself in that position.

In the case of treating supracondyloid fractures, I always reduce them under the fluoroscope. Personally, my technic is extremely simple. I make traction on the extended forearm and put my hand in the bend of the elbow, and lever the lower fragment forward. As a rule, it snaps into place.

Recently I read an article on fractures in this region, the title of which was "Transcondylar Fractures." It is very close to the region of the supracondylar fracture, but it is a fracture through the thin portion of the humerus. Well, the bone isn't very thick at this particular point, and it is extremely hard to make contact and maintain position, so this individual has suggested that we treat these cases in extension, put the patient in bed, make lateral traction, and in that way reduce the fracture and maintain reduction for a period of

three or four weeks until some union occurs, and then place the extremity in a plaster cast.

In fractures of the condyles these fragments should always be replaced. If you don't you are going to get yourself into trouble, and ordinarily, as Dr. Bagwell has brought out, it takes an open operation for reduction.

In the case of the lateral condyle, unless reduction is complete you may eventually get a tardy ulnar paralysis, which may come on many months after the injury if precaution has not been taken to make a good reduction.

There is one injury in this region which Dr. Bagwell did not mention, and I am sure again it was done because of lack of time, and that is a separation of what we call the internal epicondyle of the humerus. To this epicondyle is attached the flexor and pronator muscles of the forearm. When this small fragment which is attached by an epiphyseal line to the condyle is detached, obviously it carries along within the origin of the flexor and pronator muscles of the forearm. Attending this injury is sometimes a tearing of the internal lateral ligament of the elbow which causes the elbow joint to widen and thus permit this little bony fragment to give in between the ulna and the humerus. There is no type of manipulation that is going to get that little fragment out. There is nothing to do but an open operation, replace this fragment and hold it with a small nail.

In so far as the injuries to the head of the radius are concerned, I agree with him in detail. In so far as fractures of the olecranon are concerned, personally I think all one has to do to maintain reduction and in those fractures in which there is a separation of the process, I simply suture the periosteum. I don't think there is any particular occasion to drill a hole in the fragments or use wire. I think if you will oppose your fragments and sew your periosteum, you will get as much fixation as the case may need.

Again may I compliment Dr. Bagwell on his paper and say how much I enjoyed it.

I thank you.

DR. GEORGE CARPENTER (Nashville): Dr. Bagwell has given us a very fine paper. Of course, as the doctor brought out, he has covered a very large subject.

I will confine my remarks to the supracondylar fracture of the elbow, mainly to emphasize some of the things Dr. Bagwell brought out and which he would have discussed more forcibly should he have had more time. These fractures, of course, occur in the majority of instances in young children between the ages of five and twelve. It is, of course, the most frequent elbow fracture, and one of the most frequent of all fractures.

The most important thing in the treatment is to reduce the fracture early and reduce it under a general anesthetic. Of course, if you see a child six hours after the accident, then it is not early,

but the fracture should be reduced right away. A secondary reduction in those cases where there is excessive swelling may be needed to obtain as much acute flexion as is necessary, or after twenty-four to forty-eight hours the arm may have to be placed in more flexion. The fracture is maintained in the position of acute flexion, whether it be maintained with adhesive plaster, plaster splints or what not; so long as the fracture is reduced and is maintained in acute flexion by some effectual method, it matters not just what method is used.

Dr. Bagwell brought out the importance of watching the circulation; the radial pulse should always remain accessible so that it can be felt and palpated, and for the first twenty-four to forty-eight hours you must always be able to palpate the radial pulse. There must be sensation, of course. The most unfortunate complication you must be on the lookout for is a Volkmann's ischemic paralysis. There is pain, blanching of the hand, the hand gets clammy, you cannot feel the radial pulse, and these findings call for immediate treatment. Decrease the amount of flexion and if you don't get immediate improvement, an operation to open up the muscle sheaths to relieve the hemorrhage and the pressure inside the muscle sheaths is imperative.

I have often heard that these fractures will heal in two weeks. I am certain mine require at least three weeks like Dr. Bagwell's. At that time I let the elbow down to a right angle. Early motion is begun, both active and passive. All motion must be gentle, particularly passive motion, and most of the motion at this time should be active motion. There is no need for any early real vigorous passive motion in these cases. Too often passive motion is instituted too early and too vigorously. The elbow is made painful and the child becomes scared and resists all use of the arm. The case has been handled too severely, but improvement will follow rest, heat, encouragement, and later active use of the arm.

DR. TROY BAGWELL (closing): My closing remarks will be first to thank the gentlemen, Dr. Meyer and Dr. Carpenter, who so nicely discussed the paper.

In accepting the subject, "Fractures About the Elbow," I knew it would be impossible to cover adequately all the phases of all the fractures that occur. I think the main thing would be to stress the fact that early reduction in supracondylar fractures, instead of waiting until your swelling appears with some sort of temporary splinting, is by far the best procedure.

Next, remember that in all fractures of the medial condyle of the humerus in which there is separation and rotation of the fragment, it is absolutely imperative that this should be replaced minutely and that transplanting the ulnar nerve will save a lot of trouble later on. Delayed ulnar palsy in fractures of the medial condyle is one of the most serious of the things we are encountered with. Of course, the nerve can be transplanted at any time, but at the time you are fixing the fragment back to the host is the best time for fixation.

To disagree with Dr. Meyer slightly, though I did not get to complete the paper on fractures of the olecranon, fixation of the periosteum only in my mind is not sufficient for maintaining sufficient fixation for a firm bony union. Usually following loose fixation of that sort a fibrous union results, though in many instances good useful elbows are obtained. Frequently we do not have useful elbows with fibrous fixation.

In fractures of the head of the radius, in which there is any displacement, it might be well to wait for a while to find out the amount of limitation of motion in the elbow, because almost without exception some operative procedure for removal of the head or fixation is necessary.

I certainly appreciate the opportunity of having read the paper.

THE RATIONALE OF SPLENECTOMY IN THE TREATMENT OF CERTAIN ANEMIAS*†

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IT IS THE PURPOSE of this discussion to present from the surgical clinic, as well as from the hematological laboratory, further evidence which, by clarifying the pathologic physiology involved, has added to the rationale of splenectomy in the treatment of certain anemias which occur in man.

There are various factors concerned with the physiology of the human spleen which become of surgical significance in evaluating the role played by the spleen in the development of these anemias. Among them should be mentioned: the phagocytic action of the pulp clasmotocytes upon the red blood cells; the preservation of the ferric portion of the hemoglobin, which is eventually transported to the liver through the splenic vein; the "sequestration effect," which removes many red blood cells from the active circulation, and may even maintain them within the "reservoir" afforded by the splenic pulp spaces; a more subtle and illy understood effect by which the spleen appears to inhibit bone marrow hemopoiesis; and finally a newly-discovered lytic effect which certain splenic extracts appear to exert upon the blood platelets. Thus anemia may result from different perversions of the normal splenic physiology.

It is commonly thought that the spleen is an organ of mystery and that the function of the human physiology of the spleen represents a great gap in our medical knowledge. It is true that much remains to be learned; nevertheless, modern physiologic hematology has made truly remarkable advances so far as clearing our concepts of the pathogenesis of certain anemias is concerned. As a consequence the surgical re-

moval of the spleen, long practiced, has become even more definitely indicated in the treatment of certain anemias. While the indications for splenectomy have thus been sharpened, they have also been extended.

It is the plan of this discussion briefly to review certain of the findings of our Ohio State group, particularly as relating to splenectomy in the treatment of congenital hemolytic icterus, thrombopenic purpura, Banti's syndrome or "splenic anemia," and hypoplastic anemia. The frequent pigment cholelithiasis of congenital hemolytic icterus, as well as the relation of the accessory spleen to the recurrence of an anemia subsequent to the splenectomy, will also be considered.

Congenital hemolytic icterus appears to offer the clearest indication for splenectomy. The results are immediate and lasting and the operative mortality is low. Too, splenectomy may be safely accomplished even during the acute exacerbations.

Congenital hemolytic icterus may be recognized when the patient is first seen by the presence of a moderate icterus, an anemia with a resultant peculiar waxy pallor and a palpable spleen. The principal confirmatory laboratory findings include the occurrence of many small spherical erythrocytes—a microcytosis; increased numbers of undeveloped red blood cells containing nuclear fragments—a reticulocytosis; an increased tendency of the red blood cells to be hemolyzed in dilute salt solutions—an increased fragility; and an increased icterus index.

The Genetic Factor.—Congenital hemolytic icterus is an inherited disease. It may be transmitted from either parent to the children of either sex. It is thus genetic; that is to say, it is carried to succeeding generations in those minute divisions of the chromosomes known as *genes*. While this concept may seem far afield, nevertheless, it has a definite clinical bearing. For exam-

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ple, doubt may arise concerning the diagnosis of congenital hemolytic icterus, and particularly during the acute exacerbations or in young children. In these instances a study of the blood of the direct near relatives should be made. If this reveals the characteristic stigmata—small spherical red blood cells, an increased number of reticulocytes or an increased fragility of the red blood cells—confirmatory evidence is thus obtained. Moreover, clinically, search may be made in the near relatives for a history of unexplained icterus or anemia, a lifelong unusual pallor or an enlarged spleen.

Splenectomy in either parent with the disease will not prevent its development in children of either sex conceived *after* removal of the spleen. Such instances are well recognized. This offers further evidence of the genetic nature of congenital hemolytic icterus.

Keeping this in mind, it would appear that the manifestations of the disease which we face are particularly those of hypersplenism and essentially an increased phagocytic activity of the splenic pulp cells for erythrocytes. This may be actually demonstrated by taking the warm spleen at once from the operating room and examining pulp smears on a warm stage by the supravital technic. In this manner one actually sees the hypersplenism in the increased and highly phagocytic clasmatoocytes.

Nevertheless, these are phagocytic reticulo-endothelial cells, and they exist in other parts of the body; for example, in the lymph glands, in the liver, in the bone marrow, and in the hemolymph glands. The bearing of these facts will be discussed in connection with the accessory spleen.

Accessory spleens occur more frequently in man than is generally recognized. Too, their gross appearance and histological structure is quite similar to that of the normal organ. During the course of our fifty-eight splenectomies we have noted from one to nine accessory spleens. They vary greatly in size and in location. By a curious embryological anomaly they may even attach to the ovary or testicle, and be subsequently carried down into the pelvis or scrotum. Such instances are very rare.

It is known that these accessory spleens may enlarge subsequent to the splenectomy, either experimentally or clinically. It is also recognized that in thus enlarging, they, too, may assume a pathological function and thus reintroduce the clinical syndrome for which the primary splenectomy was originally accomplished. Thus, it becomes of importance to search for and remove accessory spleens during the course of the splenectomy in order to prevent a recurrence of the disease for which removal of the spleen was originally indicated.

Recurrence of the symptoms of congenital hemolytic icterus or of thrombopenic purpura subsequent to splenectomy is occasionally encountered. Instances are reported. I have seen one. In this child of four the primary splenectomy was successfully accomplished during an acute hemoclastic crisis in September of 1933. Return of the characteristic symptoms and of the diagnostic blood findings was noted about four years later. Exploration of the abdomen in February of 1938 revealed two small accessory spleens. Removal of these has again resulted in clinical improvement.

While the occurrence of an accessory spleen is usually responsible for the recurrence of congenital hemolytic icterus or of thrombopenic purpura, nevertheless, other factors should be kept in mind. The hemolymph glands are intermediate in structure between the lymph glands and the spleen. Too, lining their sinuses are phagocytic reticulo-endothelial cells. It is consequently reasonable to suspect them where the recurrence is otherwise unexplainable. In man they are usually retroperitoneal. Further study should be made of this unusual possibility, owing to the persistence of the genetic background.

Acute Hemoclastic Crises.—Our first splenectomies for congenital hemolytic icterus were accomplished after prolonged daily observations of the fluctuating levels of the various blood cells. These established the usual range of daily variation and served as a control base line from which to evaluate the results of splenectomy. Charts of these studies have been published. On the day of splenectomy blood studies

were made more frequently—at intervals of from fifteen to thirty minutes throughout the day. These revealed a significant discovery—that the major increase in erythrocytes and hemoglobin follows *immediately* the removal of the spleen. Subsequent studies then revealed that this was not an occasional finding, and that it ensued regularly whenever sufficient observations were made. This amounted essentially to an “autotransfusion.” It thus became a significant surgical fact that the anemia of congenital hemolytic icterus is *immediately* improved by splenectomy. The mechanism by which this occurs has been presented at length by Dr. Charles A. Doan in his Beaumont lectures.

A consideration of the advisability of attempting splenectomy during the acute and at times fulminant exacerbations of blood destruction, commonly known as “hemoclastic crises,” naturally followed. Experience of others in the past had taught that the “crises” were a direct contraindication to splenectomy. Nevertheless, we had evidence of the major role played by the spleen as well as the knowledge of the *immediate* improvement of the anemia following removal of the erythroclastic spleen. As a consequence, I have accomplished nine splenectomies during the critical phases of congenital hemolytic icterus with the loss of but one patient. This evidence points directly to the hypersplenism, and further supports the rationale of splenectomy in the treatment of congenital hemolytic icterus.

Approximately two-thirds of those patients with congenital hemolytic icterus have *gallstones*. These increase in incidence with age. Thus they may present also abdominal symptoms, ranging from a mild epigastric distress to even a superimposed obstructive jaundice. The gallstones so commonly present are, as a rule, of an unusual variety. They represent largely masses of blood pigment; formed in the spleen by the increased breakdown of red blood cells; transported to the liver; excreted in the bile in increased concentration and finally agminating within the gall bladder. However, they may be associated

with cholesterol deposits; for example, as a nucleus, or even be covered with calcium deposits. Frequently they are dark, irregular, craggy, and fragile.

The prophylactic effect of accomplishing the splenectomy, *when once the diagnosis is established*, early in life, should receive serious consideration. Four factors are involved. *First* concerns the prevention of the common subsequent formation of pigment gallstones; the *second* concerns the prevention of the acute hemoclastic crises, which may be precipitated by various causes; for example, by an acute severe infection, by trauma, or by another surgical operation; the *third* concerns preventing the debilitating effects of the prolonged anemia. We have seen this delay the healing of fractures and of nonspecific ulceration; and *fourth*, the splenectomy may be accomplished with less difficulty and less hazard.

The enlarged spleen of congenital hemolytic icterus is ordinarily not adherent. In this it contrasts sharply with the enlarged spleen of Banti's disease. In those older cases where there has been a perisplenitis, however, its capsule may adhere tightly to the diaphragm. In these instances it has been found possible to accomplish a subcapsular separation, controlling the oozing splenic pulp with hot packs.

Thrombopenic Purpura.—The relationship between the decreased blood platelets and certain hemorrhagic diseases was recognized fifty years ago by Denys, in 1887. However, it was not until twenty-nine years later when Kaznelson advised and Schloffer accomplished, in November of 1916, the first splenectomy for what then was termed “thrombocytolytic purpura.” Kaznelson based the rationale of his splenectomy upon the hypothesis that the spleen actively destroyed the thrombocytes. Nevertheless, while recognizing the value of splenectomy in the thrombopenic diseases, his contemporary, Frank, as well as subsequent investigators, were not in accord as to the mechanism by which the beneficial effects were brought about. They assumed that the decrease in platelets was originally due to

some inhibitory action by the spleen upon their production in the bone marrow.

Two principal views are thus current concerning the pathogenesis of the thrombopenia. At present the majority of clinical students favor that of lysis by the spleen.

Recent experimental work, however, has further clarified this point. Troland and Lee have shown that the spleens removed from three patients with thrombopenic purpura contained a substance which reduced the platelet count of normal rabbits' blood sometimes as much as ninety per cent. Four control extracts, prepared in a similar manner, from thyroid tissue, a myomatous uterus, a spleen from a patient with Banti's syndrome, and a spleen of congenital hemolytic icterus, yielded no similar effect. However, the manner in which this resultant thrombopenia is brought about remains for further investigation. Moreover, others have been unable to confirm their findings.

"Hemorrhagic purpura" is difficult to define accurately as a circumscribed disease entity, since investigators have thus far recognized no single causative factor. Too, the pathological findings are not always the same, and often may be indefinite. As a consequence, its differential diagnosis may be difficult to establish. Among the disturbing factors may be mentioned those which affect capillary permeability, the spontaneous remissions which are known to occur, the acute exacerbations which may even threaten life and the beneficial effects of blood transfusions. Moreover, in a multiplicity of states the purpura is symptomatic.

Nevertheless, certain definite findings may be presented as a basis for making a diagnosis of "thrombopenic purpura." These have been assembled by Doan as follows: (a) a low or absent platelet count; (b) a prolonged bleeding time; (c) a normal clotting time, but (d) a failure of the clot to retract; (e) spontaneous petechiae or those readily induced by the tourniquet test; (f) a leucocytosis or perhaps a reticulocytosis, which would rule out a general marrow hyperplasia; and (g) the absence

of abnormalities in the red or white cells indicative of pernicious anemia or leukemia, or of any other foreign cellular metaplasia, such as metastatic carcinoma within the bone marrow, which would inhibit the activity of the megakaryocytes.

Splenectomy for "thrombopenic purpura" of this type is recognized as a sound surgical procedure, since it is based upon the principle of correcting a pathologic physiology. Numerous are the reports which attest to its success. However, it should be recognized that the differential diagnosis is of importance. Nevertheless, there are two points which we may add to further substantiate such a procedure. *First*, that splenectomy may be safely accomplished during that acute phase of the disease which is commonly known as a "crisis," and *second*, that the occurrence and subsequent enlargement of an accessory spleen may clarify certain recurrences subsequent to a successful splenectomy.

Experience in the past has shown a high mortality when splenectomy was attempted during the acute phases of the disease. As a consequence, it became an accepted surgical teaching that splenectomy was contraindicated in these states. On the other hand, Marsh's analysis of these earlier failures showed that prior to 1925 preoperative blood transfusions were not employed, save for one patient, who recovered. Moreover, during the succeeding five years, four additional recoveries of patients transfused immediately preceding the splenectomy were reported.

Our own experience substantiates the importance of preoperative transfusions. The platelet count does not appear to be of prognostic significance. Too, it appears that the normal red cell and hemoglobin levels are reestablished with greater certainty by splenectomy than by repeated blood transfusions. Four out of five of our patients subjected to splenectomy during acute exacerbations have survived. In all four the bleeding tendency ceased at once and has not recurred.

The postoperative rise in the platelet count, as has been demonstrated in our

charts, was irregular. The initial and immediate rise was presumably due to the removal of the spleen. The subsequent secondary rise, after a decrease, may well have been the result of removing some inhibitory effect upon the activity of the megakaryocytes. One patient is clinically well after six years. Twenty-one months after the splenectomy she gave birth to a normal female child. No recurrence of the bleeding tendency was noted at that time, nor since; however, it is of interest that the infant had a decreased platelet count.

Banti's Syndrome.—Banti's syndrome or "splenic anemia" presents, although not so clearly, an indication for splenectomy. This is best accomplished during the early stages of the disease. During the later stages the enlarged spleen becomes unusually adherent to the surrounding viscera. Too, the increased vascularity, particularly due to venous engorgement, makes for technical difficulties. The morbidity and mortality of this latter splenectomy are high. Consequently, ligation of the splenic artery, inside the origin of the major pancreatic artery, is to be considered. It is of some value, although not so effective as splenectomy.

Hypoplastic Anemia.—The majority of those patients upon whom we have accomplished splenectomy have shown postoperatively an increase in both erythrocytes and platelets. These findings were at first evaluated on the basis that the spleen actively destroys these formed elements circulating within the blood stream. Nevertheless, the sustained increase, observed in following the blood picture for months and even years, has warranted another assumption—that some inhibitory influence upon bone marrow hemopoiesis is at the same time removed.

Patients with hypoplastic anemia present a slowly progressive bone marrow aplasia which presumably involves the entire marrow. This may be readily demonstrated by biopsy or by marrow puncture. Under

these conditions it seemed rational that the spleen, even though normal in size, might well reduce even further the available number of circulating erythrocytes and platelets through the activity of its hemolytic and inhibitory functions. In certain of these patients, moreover, the thrombopenia may even reach such a point that hemorrhages occur. Splenectomy in these patients would thus physiologically aid in restoring the disturbed hemolytotoxic balance, although to a lower level than normal owing to the impaired bone marrow.

As a consequence we have advised and accomplished splenectomy upon ten selected patients with hypoplastic anemia. All survived the operation without complications. The subsequent improvement has been variable, both as to time and degree; nevertheless, it has been encouraging. One of our patients, operated in 1933, is still alive and improved. Another patient, presenting hypoplastic anemia secondary to benzol poisoning, was managed medically for a year and a half, yet the thrombocytes remained persistently low. Splenectomy resulted in a restoration of the cellular equilibrium and an unusual and maintained clinical recovery.

It is evident, however, that splenectomy for hypoplastic anemia does not consistently yield the striking beneficial effects that follow removal of the spleen in thrombocytopenic purpura, or in congenital hemolytic icterus. Its results are palliative rather than curative, and it gives surgical aid rather than relief, since the impaired bone marrow remains. The degree of functional recovery would consequently appear to depend upon the available mesenchymal tissue within the marrow, which, by forming new primitive cells, would aid in increasing hemopoiesis.

On the other hand, some improvement ensues in these patients since they maintain for varying lengths of time a higher average level of platelets and erythrocytes; require subsequently fewer transfusions; and appear to attain a longer life expectancy.

Certain of these results may be best presented by means of slides. (A number of slides were then shown.)

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ACQUIRED SYPHILIS IN CHILDHOOD—REPORT OF A FIELD STUDY*

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WITH THE INCREASE in the number of epidemiological investigations of early syphilis resulting from the extension of venereal disease control programs in state and local governments, it will not be surprising to find that acquired syphilis in childhood is not as rare as is generally believed. In a review of literature, Smith¹ found that very few cases of this type have been reported. In a study of records of nineteen widely scattered clinics in the eastern and southern United States, he found 125 cases of this type and states that in all probability acquired syphilis in this age group is more common than the number found would indicate. It is not at all unlikely that many of these cases are being diagnosed as congenital syphilis.

Often syphilis is masked by a gonorrheal infection. The importance of making serological tests on patients with gonorrhea has been pointed out by Stokes.² He states that this procedure should be carried out in all cases of gonorrhea even in the absence of a genital sore, and that the adoption of this procedure will reveal at an early stage sixteen per cent of syphilitic infections in which no history of onset other than gonorrhea can be obtained.

Nelson³ points out that the physician has a great responsibility in the control of syphilis. To paraphrase: "Avoidable failure to make the diagnosis places squarely on the physician's shoulders the responsibility for every subsequent infection which he might have prevented by making it. *Treponema pallidum* knows full well that it enjoys its present awful hold upon the human race because so few people have been taught to suspect the infection early, and because so few physicians have done their duty as the only health officers competent to make the diagnosis, or in a position to

control the known infection or to discover related ones."

This investigation was made at the request of a physician (Physician A) living in a county without full-time health service. R. B. (1), a white male, age nine, had been taken by his father to Physician A for treatment of gonorrheal urethritis in September, 1938. The child had been under the care of Physician B for two months prior to that time. Because the child's condition did not improve materially, the father had sought medical advice from Physician A.

On examination of the child, Physician A found papular lesions in the palms of both hands, which led him to suspect a syphilitic infection. Blood for serological examination was obtained and positive Wassermann and Kahn tests were found. A second blood examination was also positive.

On finding that R. B. (1) had syphilis, Physician A examined the other members of the family [B. B. (3), white male, age thirty-three, the father; G. B. (4), white female, age thirty-one, the mother; L. B. (2), white female, age six, a sister; S. B. (5), white female, age two, a sister; and A. T. (6), white female, age sixteen, an aunt] expecting to find a syphilitic infection of the mother and father. Physical examinations of these persons were negative. Repeated serological tests were negative on all except L. B. (2), for whom two successive positive reports were received. She had no evidence of a gonorrheal infection at the time of the examination.

The parents of the children denied ever having had a venereal infection or treatment for such an infection. There had been no miscarriages or stillbirths and all children born of this mother are living.

Four months prior to the time the children came to the attention of Physician A, R. B. (1) developed lesions about the anal region. The father consulted Physician B about these lesions and was told that they

*From the Tennessee Department of Public Health, Nashville.

were of no particular significance. A drug for local application was prescribed and the lesions soon disappeared. No serological tests were made. Three weeks later L. B. (2), the sister, developed similar lesions. On contacting Physician B, the same treatment was carried out and no serological tests were made. (In conference with Physician B, he stated that this child also had a gonorrheal infection at that time for which she was treated.) No history of other lesions on these children could be obtained. Although it cannot be definitely stated that these lesions were syphilitic, it is quite likely that they were condylomata.

Inquiry was made as to the probable extra-familial source contacts of these children. Only two possible leads were found. R. B. (1) had been in contact at school with M. H. (7), white male, age eight. In March, 1938, R. B. (1) had noticed an eruption on this child's hands. The child was located and an examination made. Findings were negative except for a scabies infection. Blood was obtained for Wassermann and Kahn tests and were found to be negative.

In February, 1938, a tenant family moved on the farm of the father of the two children. C. B. M. (8), a white male, age nineteen, a member of the tenant family, played with the two children from time to time. In May, 1938, the children's father noticed that C. B. M. (8) walked with some difficulty. He was taken to Physician B for an examination. A diagnosis of gonorrheal urethritis was made. Neither a complete physical nor a serological examination was done. On learning that C. B. M. (8) had gonorrhea, the father of the children had the tenant family moved off of the farm.

C. B. M. (8), when located, gave a history of having a penile lesion in December, 1937. Approximately six weeks after the onset of the primary lesion, a secondary rash and condylomata appeared. The rash soon disappeared. Condylomata of the perineum had been present continuously since they first appeared. A rash had reappeared about one week before he was examined.

A complete physical examination revealed a general adenopathy, a typical maculopapular rash distributed over the chest,

abdomen and back, and secondary infected condylomata of the anal region. Repeated Wassermann and Kahn tests were strongly positive. There was no evidence of a gonorrheal urethritis at that time.

Within an hour after C. B. M. (8) was first seen, he was arrested and charged with criminal assault (pederasty) on J. B. (9), a white male, age five. He pleaded guilty as charged and was sentenced to the state penitentiary. J. B. (9) was kept under observation for a period of one month, at which time the family moved out of the state. The health authorities of the state concerned were notified as to the possibility of a syphilitic infection in the child.

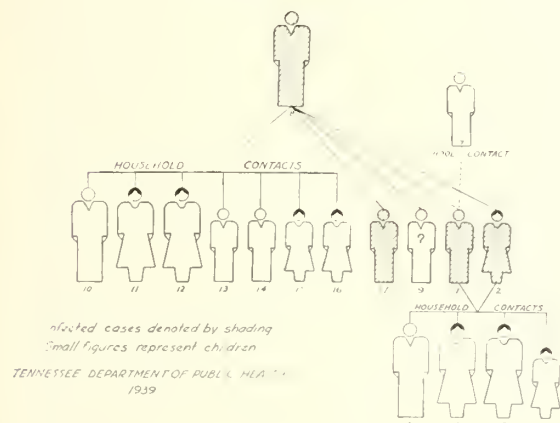
Repeated questioning of R. B. (1) and L. B. (2) failed to elicit a history of criminal assault on them by C. B. M. (8). However, L. B. (2) stated that C. B. M. (8) had exposed himself in her presence and suggested a pervert act. Although they denied that a criminal attack had been made, it is possible that such an attack did occur. The fact that both were said to have had gonorrheal infections would further add to this circumstantial evidence. It has been noted that children will admit such attacks months after its occurrence, in the meantime having repeatedly denied it.

Further inquiry as to the actions of C. B. M. (8) after leaving the farm of B. B. (3) revealed that there was a possibility of another case of syphilis being contracted from him. Soon after leaving the farm he was requested by an aunt living in an adjacent county to go and live with her and assist with the farm work. In June, 1938, he went to live with this aunt. On arriving he was assigned to a room with his cousin, F. S. (17), a white male, age nine, with whom he slept. Some ten days after his arrival, F. S. (17) noticed lesions on C. B. M. (8) in the region of the perineum and immediately informed his mother. C. B. M. (8) was immediately sent home.

During the last week in July, 1938, F. S. (17) was taken to Physician C, the family physician, for an examination. A maculopapular eruption was found distributed over the back, chest, and extremities. Several mucous patches were present on the buccal

surfaces of the mouth. A clinical diagnosis of acquired syphilis was confirmed by serological examination. A history of a primary lesion was not obtained. He denied that a criminal attack had been made on him.

AN OUTBREAK OF ACQUIRED SYPHILIS IN CHILDHOOD



Physical and serological examinations were made on all members of the family of C. B. M. (8) (numbers 10, 11, 12, 13, 14, 15, and 16). No evidence of infection was found among this group. An effort was made to determine the source of the primary case and other spread contacts. Due to the lack of cooperation of the primary case, efforts were unsuccessful.

DISCUSSION

An outbreak of acquired syphilis in childhood has been reported. The outbreak of syphilis is not unusual except that children are involved rather than adults. Certain findings of this investigation, however, are important in that examples are given of how syphilis may be missed. Syphilis occurs in persons where it is least expected, and for this reason, when examining a

patient, the physician should always think of syphilis and the possibility of it being present.

Examples have been given, showing the importance of complete physical examinations. One or more secondary cases would have been prevented if a complete physical examination had been made on the primary case. Failure to make the diagnosis gave the organism five additional months to work unabated and decreased proportionately the patient's chance of receiving a biological "cure." Failure to recognize the disease in the two children decreased their chances for biological "cure."

The outbreak also demonstrates how syphilis and gonorrhea may be present in the patient at the same time and strikingly illustrates the necessity of having serological tests done on patients with gonorrheal infections.

To control syphilis, it is necessary that there be close cooperation between private physicians and health authorities. Private physicians have a unique opportunity in syphilis control since the physician is the one who first sees the early case of syphilis. Failure of the physician to obtain a list of contacts from the patient at this time enhances the spread of the disease in the community. Local full-time health officers stand ready to give assistance to the physician in seeing that these contacts are examined.

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THE JOURNAL

OF THE

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H. H. SHOULDERS, M.D., Editor and Secretary

APRIL, 1940

THE ISSUE

SHALL PATIENTS AND DOCTORS RETAIN THEIR FREEDOM OF JUDGMENT IN THE MATTER OF MEDICAL CARE, OR SHALL THIS FREEDOM BE SURRENDERED TO SOME GOVERNMENTAL AGENCY?

EDITORIAL

THE AMERICAN MEDICAL ASSOCIATION AND THE AVERAGE PHYSICIAN

For some years now a campaign has been going on to destroy the confidence of the so-called "rank and file" of the profession in the leadership of the American Medical Association.

It has been insisted that the leadership of the American Medical Association does not represent the opinions and convictions of the rank and file of physicians throughout the country.

Such efforts have been exerted, in the main, by nonmedical people for the purpose, no doubt, of destroying the effectiveness of the American Medical Association as an opponent of the adoption of communistic medical laws under the guise of welfare measures.

Of course, the American Medical Association is democratic in concept, in organization, and in practice.

Representation in the House of Delegates is on the basis of membership in the Amer-

ican Medical Association. The delegates are elected by the various constituent associations.

The American Medical Association has no patronage with which to influence votes for any candidate as delegate, nor is the leadership in position to undertake a purge of undesirable delegates if such were in existence.

Notwithstanding all these facts, the campaign has been carried on and has been supported, in some measure, by some members of the American Medical Association.

Recently the question as to whether or not the American Medical Association represents the sentiment of the *rank and file* of doctors throughout the country has been answered by a referendum conducted by *Modern Medicine*. The referendum asks four questions: (1) Do you approve the platform of the American Medical Association? (2) Specifically, do you favor local responsibility . . . for the expenditure of public funds allotted to provide medical care for people who need it and cannot afford it? (3) Would you cooperate with a federally administered and controlled legislative program tending toward drastic curtailment of the private practice of medicine? (4) Do you think such a program would result in a deterioration of the quality of medical service available to most people in the United States?

The ballots of doctors who were not members of the American Medical Association were included in the tabulation; 20,215 ballots were cast.

The sentiment of the profession as indicated by the vote on the four questions stated is as follows:

Eighty-five per cent approve the platform of the American Medical Association.

Eighty-eight per cent favor local responsibility for medical care and believe federal control would result in inferior service.

Eighty-five per cent would refuse to cooperate with a federal program threatening the continued existence of private practice.

The results of this poll indicate that (a) the rank and file of the profession do support the leadership of the American

Medical Association; (b) that the leadership of the American Medical Association does accurately interpret the sentiment of the profession of the United States; (c) that the sentiment of the profession is overwhelmingly opposed to those who would foster a communistic scheme of medical care with vast powers vested in some central agency in Washington; and (d) that the profession is probably more united on these issues than ever before.

CONGRATULATIONS TO THE NORTH CAROLINA MEDICAL JOURNAL

The medical profession of our sister state, North Carolina, have begun the publication of a medical journal. The editor is Dr. Wingate M. Johnson.

This venture should and doubtless will serve a very useful purpose to the medical profession, not only of North Carolina, but the country over.

We offer hearty congratulations to the profession of North Carolina.

We wish to express confidence in the ability of Dr. Johnson as editor. At the same time we wish to express to the editor a word of sympathy.

UROLITHIASIS FROM SULFAPYRIDINE

There is an old philosophy which has been restated in the JOURNAL several times to the effect that "everything that is potent for good is also potent for evil." It is true of morphine, which is a boon to suffering humanity. It is true of anesthetics. It is true even of operative procedures.

It is true also of sulfanilamide and its compounds. From experimental laboratories there come reports to the effect that stones have formed in the urinary tract of animals receiving sulfapyridine.

Keen, in the *New York State Medical Journal*, 40: 83 (January 15), 1940, reports two cases of sulfapyridine urolithiasis.

From experience already accumulated it can be stated that this is one of the most valuable drugs ever discovered and applied to human needs. It is also true that it possesses possible potentialities which must be weighed with care when considering its administration.

The Program Committee of the State Association arranged a symposium on the subject of "Sulfanilamide and Its Compounds" with the view of supplying the profession with a critical appraisal of the value and the danger of sulfanilamide and its compounds.

A PROPOSED VOLUNTARY INSURED MEDICAL SERVICE FOR CERTAIN INCOME GROUPS IN PENNSYLVANIA

On February 28, 1940, the Medical Society of the State of Pennsylvania adopted a voluntary insured medical service plan for certain income groups in the State of Pennsylvania.

Reference is not made to this development at this moment for the purpose of offering to the profession of Tennessee a complete discussion of the plan. This is written to call attention to the fact that the plan has been adopted for the State of Pennsylvania by the medical profession of Pennsylvania.

The state society authorized the introduction by the society into the 1939 Pennsylvania legislature of bills providing for the formation of a medical service association. These bills were passed.

The state society authorized certain doctors to form a nonprofit corporation and to become the first board of directors of the corporation.

In a short time the plan will be in operation.

We have great respect for the profession of Pennsylvania, and especially do we respect the opinions and judgment of the leaders of the profession in Pennsylvania.

We are not in position to make a critical analysis of the plan nor to express an opinion as to how it may work out in the future. We can speak in complimentary fashion of the diligence of the profession in making a sane effort to solve medical economic problems of the day.

We shall observe the operation of the plan in Pennsylvania with keen interest.

Another plan is in operation in Michigan.

We are still of the opinion that experience, not theories, will be the basis for accurate conclusions as to whether the adoption

of these plans is a wise move or not and as to the workability of their various provisions. The several plans now in operation should furnish this experience.

DEATHS

DR. R. S. McDAVID

Dr. R. S. McDavid, Memphis; Loyola University School of Medicine, Chicago, 1918; aged forty-eight; died March 25, 1940.

DR. R. E. FORT

Dr. R. E. Fort, Nashville; University of Nashville, Medical Department, 1894; aged sixty-eight; died March 22, 1940.

DR. WILLIAM GAYLOR

Dr. William Gaylor, Jellico; Lincoln Memorial University, Medical Department, Knoxville, 1893; aged seventy-four; died March 13, 1940.

DR. S. E. PINCUS

Dr. S. E. Pincus, Memphis; Memphis Medical Hospital College, 1896; aged seventy; died March 26, 1940.

DR. M. A. SCHULTZ

Dr. M. A. Schultz, Memphis; Memphis Hospital Medical College, 1902; aged sixty-three; died January 18, 1940.

RESOLUTIONS

The staff and staff members of the T. C. Thompson Children's Hospital sincerely mourn the recent death of Dr. J. B. Phillips, chief of staff.

Dr. Phillips came to Chattanooga about ten years ago, and since that time has found a lasting place in the hearts of those he contacted. His kind, sympathetic, and understanding nature rendered the arduous tasks so frequently encountered with ill children a most genuine pleasure. His mellow personality was most suited to the responsibilities recently assumed when honored by appointment to chief of staff of the hos-

pital on January 1 of this year. His sojourn was most brief for one so well fitted.

To his two sons we extend our heartfelt sympathy. We feel that with the natural endowments with which they were left that their paths in life will have been made happier and more understanding as a result of having such a father.

W. E. VAN ORDER, *Secretary*.

NEWS NOTES AND COMMENTS

Dr. John J. Killeffer announces the opening of his offices in Suite 1012 Medical Arts Building, Chattanooga, Tennessee. Practice limited to orthopedic surgery.

CHANGE OF ADDRESS

Dr. R. H. Elder, Sparta, to Cedar Hill, Tennessee.

Dr. John M. Parrish, Jr., 55 Blackstone Avenue, Chicago, to 701 N. E. Fifteenth Street, Oklahoma City, Oklahoma.

Dr. Jos. C. Wood, Crossville, to Tygart Valley Homesteads, Elkins, West Virginia.

Dr. W. B. Harrison, Union City, to Hall County Health Unit, Gainesville, Georgia.

Dr. J. C. Turley, Covington, to 626 Center Drive, Memphis.

Dr. Thomas Wells, Hutchinson, to Veterans Hospital, Alexandria, Louisiana.

Dr. J. D. Henderson, Knoxville, to 1051 Parkway, Alliance, Ohio.

Dr. G. W. Thomasson, Jr., Nashville, to 3600 Fairmont, Dallas, Texas.

Dr. Chas. M. King, Jackson, to Natchitoches, Louisiana.

WOMAN'S AUXILIARY

President.....Mrs. Matt Murfree
Murfreesboro

President-elect.....Mrs. W. T. Braun
Memphis

Press and Publicity.....Mrs. R. Z. Linney
Madison

It will not be long now before the Woman's Auxiliary to the American Medical Association will be convening at the Hotel Pennsylvania, New York City, for their

eighteenth annual convention, to be held June 10-14, 1940. Is your reservation in? We are sure you will want to stay at the headquarters, Hotel Pennsylvania. In order to get a reservation, mail your request today to Dr. Peter Irving, Housing Bureau, Room 1036, 233 Broadway, New York City.

RUTHERFORD COUNTY

Explaining the structural setup of the United States Veterans Administration, Major J. G. Sims, head of the legal division of the Murfreesboro unit, was feature speaker at the meeting of the Woman's Auxiliary to the Stones River Academy of Medicine, held at the home of Mrs. W. K. Tilley on North Spring Street.

Major Sims said that until 1930 his work with the Veterans Bureau was mainly concerned with providing for pensions and benefits, but that in 1931 the hospitalization was combined with the legal departments, was opened to veterans of all wars, and was called the Veterans Facility.

"There are twenty-eight such facilities in the United States," Major Sims said, "the last to be established is Names Department."

He explained the six departmental heads of the administration; namely, medical, judication, legal, financial, supply, and utility.

Mrs. J. B. Black, president, presided over the routine business meeting.

DAVIDSON COUNTY

The Woman's Auxiliary to Nashville Academy of Medicine and Davidson County Medical Society met in March at the home of Mrs. Horace Gayden. Associate hostesses were Mrs. George Carpenter, Mrs. Raymond Crowe, Mrs. Hamilton Gayden, Mrs. Reuben Gayden, Mrs. J. T. Hayes, Mrs. Hollis Johnson, Mrs. Ogle Jones, Mrs. H. E. Paty, and Mrs. W. W. Wilkerson.

Mrs. Joseph Travenick presided. Delegates elected to state auxiliary meeting in Chattanooga were Mrs. J. D. Lester, Mrs. James T. Hayes, and Mrs. W. R. Cate. Alternates are Mrs. Sydney McClellan, Mrs. Oscar Nelson, Mrs. David Hailey, Mrs. Carl

McMurray, Mrs. Horace Gayden, and Mrs. P. G. Morrissey.

Dr. Kate Savage Zerfoss addressed the group on mental hygiene.

Special guests were Dr. Cerva Bowie, Dr. Katherine Dodd, Dr. Edna Pennington, and Dr. Pauline Tenzel.

KNOX COUNTY

The Auxiliary to the Knox County Medical Society met Wednesday, April 3, at 10:30 A.M., at the home of Mrs. Tom Drinnen in Holston Hills.

Mrs. H. C. Long, president, presided. Mrs. Edgar Grubb arranged a very interesting program following the business session.

Mrs. Frank Rouser showed the new educational alcoholic movie put out by the W. C. T. U., called "The Pay-Off."

After the program luncheon was served. Mr. R. G. Toppen, Mrs. J. F. Morrow, and Mrs. H. E. Christenbury and their committees were in charge.

MEDICAL SOCIETIES

Davidson County:

March 19—"Coronary Thrombosis," by Dr. S. S. Riven. Discussion by Dr. W. R. Cate.

March 26—"Duodenal Ulcers," by Dr. Cleo Miller. Discussion by Dr. T. F. Frist. "Treatment of Carcinoma of the Cervix," by Dr. Carl Crutchfield. Discussion by Dr. L. W. Edwards.

April 2—"Chorioepithelioma," by Dr. R. S. Duke. Discussion by Dr. H. M. Tigert.

"Case Report: Carotid Sinus Syndrome with Surgical Treatment," by Dr. J. A. Kirtley.

April 9—No meeting on account of the state meeting in Chattanooga.

Dyer, Lake, and Crockett Counties:

The Dyer, Lake, and Crockett Counties Medical Society met in regular monthly session on April 3. Scientific program:

"Carcinoma of the Uterus," by Dr. W. P. Watson, Dyersburg.

"The Etiology, Pathology, and Rational Treatment for Hemorrhoids," by Dr. M. W. Holehan, Memphis.

"The Nervous Breakdown," by Dr. Dick McCool, Memphis.

(Signed) C. L. DENTON, M.D.,
Secretary.

Fayette and Hardeman Counties:

There was a meeting of the society on Friday evening, March 22, with the following program:

"Organotherapy in Gynecology," by Dr. Wilson Searight, Memphis.

"Differentiation of Organic and Referred Symptoms of Heart Disease in Middle Aged People," by Dr. Henry Gotten of Memphis.

(Signed) FRANK E. JONES, M.D.,
Secretary.

Gibson County:

The Gibson County Medical Society met in regular session, March 12, with fifteen members present.

A splendid program was given by the following doctors:

"Tubercular Diseases of the Chest," by Dr. Roscoe Faulkner, Trenton.

"The Management of Ureteral Stones," by Dr. Samuel L. Raines, Memphis.

"Diverticula of the Gastrointestinal Tract," by Dr. J. A. Crisler, Jr., Memphis.

(Signed) F. DOUGLASS, M.D.,
Secretary.

Hardin, Lawrence, Lewis, Perry, and Wayne Counties:

The Five-County Medical Society met in Waynesboro on March 26. The following subjects were discussed:

"The Acute Abdomen," by Dr. Charles Webb, Jackson. Discussion by Dr. John H. Tilley, Murfreesboro.

"Management of Kidney Stone," by Dr. J. C. Pennington, Nashville. Discussion by Dr. T. J. Stockard, Lawrenceburg.

"Pruritus Anni," by Dr. D. W. Smith, Nashville. Discussion by Dr. W. E. Boyce, Flatwoods.

Knox County:

March 12—"Acute Intestinal Obstruction," by Dr. C. C. Smeltzer. Discussed by

Drs. McCampbell, Carmichael, and E. G. Wood.

March 19—"Current Trends in the Management of Malignant Disease," by Dr. I. G. McDonald.

March 26—"Carcinoma of Corpus Uteri," by Dr. J. C. Morris. Discussed by Dr. R. G. Waterhouse.

April 2—"Neurosyphilis," by Dr. W. D. Martin. Discussed by Tom R. Barry and A. H. Lancaster.

Madison County:

At a recent meeting of the Madison County Medical Society, Dr. B. L. Green of Jackson discussed "Urology's Relation to General Medicine." Others taking part in the discussion were Drs. Jere L. Crook and B. C. Arnold.

Those present were Drs. G. W. Brasher, Sam Parker, J. E. Douglass, Alvin Rosenbloom, Swan Burrus, Paul Wylie, J. D. Hopper, Richard Taylor of Jackson; G. A. Brandon and J. F. Goff, Lexington; Stevens Byars, Spring Creek; Kelly Smythe of Bemis.

Robertson County:

The Robertson County Medical Society met Tuesday night, March 11, at the Robertson County Hospital. During the business session Dr. W. W. Winters, vice-president, was elected president to succeed Dr. B. B. Sory, deceased. Dr. C. M. Banks was elected vice-president for the remainder of the year.

The essayist for the meeting was Dr. W. B. Dye, whose subject was "Influenza." Discussion led by Dr. W. P. Stone.

The following members were present: Drs. W. W. Winters, A. R. Kempf, W. B. Dye, C. M. Banks, J. S. Freeman, W. W. Porter, W. S. Rude, W. P. Stone, J. S. Hawkins, W. L. Gossett, and W. F. Fyke.

The next meeting will be held with Dr. W. W. Winters at his home at Donelson.

Sullivan-Johnson Counties:

The Sullivan-Johnson County Medical Society met in Kingsport on April 3, with an attendance of twenty-four.

Dr. Ralph Monger of Knoxville led a

round-table discussion on "The Value of Laboratory Procedure in Bedside Medicine." We have seldom had a meeting in which as many of those present took part in the discussion.

(Signed) C. F. N. SCHRAM, M.D.,
Secretary-Treasurer.

Washington County:

The annual anniversary meeting of the Washington County Medical Society was held at 7:00 P.M. Thursday evening, April 4, at the John Sevier Hotel.

Dr. J. P. Rousseau of Winston-Salem, North Carolina, spoke on the subject of "Roentgen Therapy in Infectious Diseases."

OTHER MEDICAL SOCIETIES

Southeastern Section, American Congress of Physical Therapy, will hold scientific sessions in Atlanta, Georgia, May 20 and 21. Dr. Kenneth Phillips of 1150 S. W. Twenty-Second Street, Miami, Florida, is secretary.

The Upper Cumberland Medical Society will meet in Cookeville on May 28 and 29. Dr. L. M. Freeman, Granville, secretary.

The West Tennessee Medical and Surgical Association will meet May 24 at the New Southern Hotel, Jackson. Dr. George R. McSwain, Paris, secretary.

ABSTRACTS OF PAPERS PRESENTED AT VANDERBILT MEDICAL SOCIETY, MARCH 1, 1940

1. Case Report: "Chronic Malaria," by Dr. E. E. Wilkinson and Dr. Katharine Dodd.

A two-year-old white male had a gradually enlarging mass in the left side of the abdomen since the age of four months. He had always been quite pale and undernourished. He had a hypochromic anemia with hemoglobin of four grams. Repeated blood studies, bone marrow studies, lymph node biopsy, and splenic puncture failed to establish a definite diagnosis. Although para-

sites were never found in the blood, the case was considered one of malaria and the patient was treated with atabrine and quinine over a period of about two months. The spleen decreased in size and the general condition of patient showed marked improvement.

This case was discussed by Dr. H. E. Meleney.

2. "The Pressor Properties of Kidney Extracts," by Dr. Tinsley Harrison and Dr. Arthur Grollman.
3. "The Anti-Pressor Properties of Kidney Extracts," by Dr. John R. Williams and Dr. Arthur Grollman.

Comparisons of pressor properties of normal and ischemic kidneys from both dogs and rats indicate that the essential difference between the two is a disturbed enzymatic action, resulting in the tendency for extracts from the normal kidneys to lose their pressor properties on standing, while similarly prepared extracts of ischemic kidneys usually become more pressor with time.

Nephrectomized animals display a greater rise in blood pressure from similar doses of the renal pressor substance than do normal animals. Hypertensive rats exhibit a marked fall during the last few days of pregnancy. These various observations can all be interpreted as indicating that the kidney forms not only a pressor substance, but some anti-pressor substance, deficiency of which may be important in the genesis of renal hypertension.

These papers were discussed by Drs. Morton F. Mason, W. E. Garrey, Hugh J. Morgan, Cobb Pilcher, Francis Rackemann of Boston, Joe B. Hibbitts, Jr., Milton T. Bush, and Herbert S. Wells.

COMING MEETINGS

Alabama, Medical Association of the State of, Birmingham, Alabama, April 16-18. Dr. D. L. Cannon, 519 Dexter Avenue, Montgomery, secretary.

American Medical Association, New York, June 10-14. Dr. Olin West, 535 North Dearborn Street, Chicago, Illinois, secretary.

American Pediatric Society, Skytop, Pennsyl-

vania, May 2-4. Dr. Hugh McCulloch, 325 North Euclid Avenue, St. Louis, secretary.

American Psychiatric Association, Cincinnati, May 20-24. Dr. Arthur H. Ruggles, 305 Blackstone Boulevard, Providence, Rhode Island, secretary.

American Surgical Association, St. Louis, May 1-3. Dr. Charles G. Mixter, 319 Longwood Avenue, Boston, secretary.

Georgia Medical Association, Savannah, April 23-26. Dr. Edgar D. Shanks, 478 Peachtree Street, N. E., Atlanta, secretary.

Louisiana State Medical Society, New Orleans, April 22-24. Dr. P. T. Talbot, 1430 Tulane Avenue, New Orleans, secretary.

Mississippi State Medical Association, Jackson, May 14-16. Dr. T. M. Dye, McWilliams Building, Clarksdale, secretary.

Mississippi Valley Medical Society, Hotel Fort Armstrong, Rock Island, Illinois, September 25, 26, 27. Dr. Harold Swanberg, Quincy, Illinois, secretary.

North Carolina, Medical Society of the State of, Pinehurst, May 13-15. Dr. T. W. M. Long, 321 Hamilton Street, Roanoke Rapids, secretary.

Ohio State Medical Association, Cincinnati, May 14-16. Mr. C. S. Nelson, 79 East State Street, Columbus, executive secretary.

Oklahoma State Medical Association, Tulsa, May 6-8. Dr. L. S. Willour, 210 Plaza Court Building, Oklahoma City, secretary.

South Carolina Medical Association, Charleston, April 30-May 2. Dr. E. A. Hines, Seneca, secretary.

Southern Medical Association, Louisville, Kentucky, November 12-15. Mr. C. P. Loran, Empire Building, Birmingham, Alabama, secretary.

West Tennessee Medical and Surgical Association, Jackson, May 24. Dr. George R. McSwain, Paris, secretary.

Middle Tennessee Medical Association, Spring Hill, May 16. Dr. Fowler Hollabaugh, Nashville, secretary.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By HUGH BARR, M.D.
Medical Arts Building, Nashville

Dangers of Prolonged Pentothal Sodium Anesthesia from the Pharmacological Standpoint. C. Reynolds. Current Researches in Anesthesia and Analgesia, September-October, 1939.

Pentothal sodium is only intended for short operations. Experiments were made on cats, dogs, and mice to ascertain the effects produced by repeated

fractional doses. It was found that while the initial dose produced anesthesia for seven to twenty minutes, repeated fraction doses prolonged the next period as much as forty minutes, then causing death by a repetition of the dosage without any premonitory warning.

All of this indicates that pentothal sodium has a cumulative effect, causing heart muscle poisoning and zero blood pressure before respiration ceases. In mice focal necrosis of the liver follows even after only a few minutes of anesthesia. This damage to the liver may account for cumulative action and for the toxicity of repeated fractional doses. Casual observation of a patient under this type of anesthetic gives very little idea of unseen damage or of impending disaster. Clinical survival does not necessarily mean that the drug is either safe or desirable for prolonged anesthesia.

DERMATOLOGY

By E. E. BROWN, M.D.
Doctors Building, Nashville

Erysipeloid of Rosenbach Successfully Treated with Sulfanilamide. Arthur G. Schoch, M.D., and Bedford Shelmire, M.D., Dallas, Texas. Archives of Dermatology and Syphilology.

Reports treatment of four cases of erysiploid of Rosenbach with sulfanilamide. Three of the patients responded promptly to sulfanilamide alone and were well in from three to five days. The fourth patient did not respond to sulfanilamide by mouth, but did respond to the immune serum injected locally at the advancing border of the lesion.

All patients were white men. Two received the infection from a puncture wound obtained from a fish fin, one from a beef bone, and one from a hog bone.

The duration of the eruptions varied from eleven days to three and one-half weeks.

In three of the four patients the eruption involved approximately one-third of the surface of the skin of one hand. In the fourth patient nearly all of the hand was involved.

The three patients that responded to sulfanilamide were instructed to take ten grains (.64 grams) four times a day. Healing required from three to six days for completion. Definite symptomatic improvement was noticed in all three patients at the end of the first forty-eight hours of sulfanilamide therapy.

The fourth patient who failed to respond to sulfanilamide continued taking the drug for one week. During this time there was extension of the cellulitis, and on the seventh day the immune serum was injected locally around the advancing border.

OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.
Suite 234 Doctors Building, Nashville

Treatment of Cervicitis During Pregnancy. A. G. King and R. Touff. *American Journal of Obstetrics and Gynecology*, Vol. 39, p. 520, March, 1940.

The pregnant woman with a marked cervicitis and profuse leucorrhea presents a definite problem. Because of the generally increased sensitivity of the pregnant state, she suffers with particular acuteness. Furthermore, although the correlation between cervicitis and puerperal infection has never been proved, it would seem theoretically that an infected cervix is a potential source of danger at the time of delivery. Yet, because of the gravid condition, there is a tendency to avoid any type of treatment. Most of the textbooks specifically interdict any manipulation of the cervix during pregnancy because of the danger of inducing abortion or premature labor.

Cervicitis and its attendant, leucorrhea, are a real problem in pregnancy. Because of the greater discomfort and because of the traditional fear of premature labor, if any therapeutic measure, even a douche is used. The absence of evidence in the literature suggests that the dangers of treating the gravid cervix are exaggerated. In the experiment reported, the actual cautery was used to cure the nongonorrheal cervicitis of forty-eight women between the twentieth and thirtieth week of pregnancy. The results, both subjectively and objectively, were good. There was no premature induction of labor, and comparison with 140 controls revealed no significant change in the length of labor, the incidence of operative delivery, or the mobility. Since the cauterizations were done on the diseased cervix and the control cases were relatively healthy, these data seem to be favorable for the treated cases. While the actual cautery is not to be recommended routinely or to untrained individuals, it appears that cervicitis during pregnancy may be treated successfully and safely.

OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.
Doctors Building, Nashville

Treatment of Keratitis with Hypopyon by Thermopuncture of the Cornea. G. Pacalin. *Archives of Ophthalmology*, March, 1940.

Pacalin claims to have been the first to replace the Saemisch section by puncture of the cornea with galvanocautery (*Arch. d'opt.* 48: 498 (July), 1931). Puncture relieves the increased pressure in the aqueous, helps in nutrition of the cornea, and allows for additional immune substance to be accumulated in the secondary aqueous. The same type of cautery is used as that which the author recommends for retinal detachment. Two case

histories are given to show the efficacy of the procedure. The relief of the pain is immediate. If there is any reason to believe that there is infection in the lacrimal tract, the puncta are sealed by galvanocautery. Neither the use of antiseptics nor further surgical procedures are necessary.

PEDIATRICS

By JOHN M. LEE, M.D.
Doctors Building, Nashville

Clinical Comparison of Sulfanilamide and Sulfapyridine. Henry L. Barnett, M.D. *The Journal of Pediatrics*, March, 1940.

In pneumococcus infections sulfapyridine has proven to be superior to sulfanilamide as a therapeutic agent. With few other exceptions the choice of one of these drugs over the other depends mostly on the differences in their solubilities and on the differences in the toxic reactions which they provoke.

While in general hemolytic streptococcus infections yield readily to sulfanilamide, it is felt that sulfapyridine is equally as effective against them and more so against streptococcus viridans endocarditis. While erysipelas and streptococcus meningitis have yielded as readily to sulfapyridine as to sulfanilamide medication, in a known hemolytic streptococcus infection sulfanilamide is the drug of choice for three reasons: sulfapyridine causes more nausea and vomiting, making it less satisfactory. In urinary infections a great part of the effectiveness of the drug depends upon its concentration in the free form in the urine. Sulfanilamide is more regularly and more completely excreted into the urine with a larger and more constant proportion in the free form. Finally, it has been shown that the spinal fluid concentration of sulfanilamide is greater in relation to the blood concentration than is the sulfapyridine concentration, which indicates sulfanilamide superior in streptococcus meningitis.

In subacute bacterial endocarditis, due to streptococcus viridans, the author thinks sulfapyridine has given best results, in spite of its tendency to produce nausea and vomiting. These disagreeable symptoms, marked at first, tend to subside with continued administration of the drug.

Both drugs have been equally effective in meningococcal infections, but the author prefers sulfanilamide in the usual dose orally, or subcutaneously, and intrathecally for meningitis due to the meningococcus. Toxic cases should receive serum in addition.

Sulfapyridine is the drug of choice, not only in pneumonia due to the pneumococcus, but also in meningitis and in empyema due to this organism. In this type of empyema surgical drainage is indicated and the drug should be given for a long period of time.

In children one often encounters infections of the ears, respiratory tract, or the meninges in

which drug therapy should not be delayed, and in which cases the causative organism may not be immediately determined. Under such circumstances it is advised that sulfapyridine may be given since it is effective against a greater variety of organisms, and later this may be replaced with sulfanilamide if subsequent study indicates it to be more effective against the causative germ.

Both drugs are effective in gonococcus infections, but sulfapyridine appears superior. Sulfanilamide has shown no beneficial effect in staphylococcus infections except in urinary tract infections, while the author feels that he has seen benefit in staphylococcus infections treated with sulfapyridine.

While both drugs have cleared up urinary tract infections due to the colon bacillus, for the reasons stated above sulfanilamide is preferable.

ROENTGENOLOGY

By FRANKLIN B. BOGART, M.D.

Medical Arts Building, Chattanooga

Roentgen Therapy in Lymphogranuloma Venereum. J.

I. Martin and A. A. de Lorimier. *American Journal of Roentgenology and Radium Therapy*, Vol. 42, No. 3, p. 376, September, 1939.

Many names have been used to designate this condition. It occurs most commonly where warm, humid atmospheric conditions exist and was for a long time thought to exist only in tropical climates. It is now seen in many temperate zones. It affects not only the inguinal and genitalia regions, but the rectum, colon, pharynx, and mouth, and is characterized by granulomatous lesions.

It is now well established that the etiological agent is a filterable virus. The usual mode of transmission is by sexual intercourse. The primary lesions are not permanent and heal quickly to be followed by swelling of the inguinal glands, which are apt to be unilateral or predominantly on one side. The glands may subside, but often continue, become matted, attached to the skin, and frequently form sinus tracts to the surface.

The process in the walls of the rectum or colon is similar to that of the inguinal glands. Annular extensions are likely with lymphostasis and proliferation of connective tissue. In this way, strictures are developed. Lesions occurring in the mouth are rare and may recur over long periods of time.

Sixty-one cases were treated with roentgen rays. Only one case was a female. In all but four, the lesions were in the inguinal glands. One of these showed lesions in the tongue and buccal membrane and in the other three extragenital cases, the rectum and sigmoid colon were involved.

TECHNIQUE

The initial roentgen treatment consists of fifty r. The cases that show little evidence of swelling or inflammation were given 100 r at the end of one

week. In most cases the dose could be slipped up to 200 r or to 300 r. When 200 r were used, a two-week interval was allowed, and when 300 r were used a three-week interval. A few of the cases received as much as 400 r at a treatment towards the end of the course of treatment, but an interval greater than three weeks was never used. Even with an initial dose of fifty r, there was frequently an exacerbation of symptoms after the first one or two doses. When roentgen rays were used in the inguinal region, 140 kilovolts with six millimeters aluminum filter was employed. When the lesions in the mouth and pharynx were treated, 200 kilovolts with .5 millimeter of copper plus one millimeter of aluminum was used. In a few instances as little as 400 r were given. Most of the cases required a total of 1,200 to 1,500 r, and a few received as much as 2,400 r; this over a period of about four months.

The results were gradual resolution of the lesions and almost universal good end results. In two of the fifty-seven cases, with inguinal involvement, surgical incision was necessary. These were treated early in the use of roentgen therapy, and 200 r doses had been administered. Later the initial dose was always fifty r, and it is believed that sup-puration and surgical incision can usually be avoided with this form of treatment.

CONCLUSIONS

1. Lymphogranuloma venereum should be considered in cases of inguinal adenopathy, especially where the involvement is predominantly unilateral and where there is matting and tenderness of the glands. The presence of an ulcer about the genitalia should not designate the case as one of syphilis or Ducey infection necessarily, though the three possibilities must be carefully considered. The development of multiple fistulous tracts from lymphatic glands especially should lead one to consider lymphogranuloma venereum. Smears and skin tests should be made, as well as repeated serological examinations.

2. This condition should also be considered in cases of stubborn chronic granulomatous lesions in the mouth or oral pharynx, especially if such cases manifest a marked regional lymphadenitis and a tendency toward persistent fistulous tract formations.

3. It should be considered in cases of annular or band-like constrictions in the colon or rectum. The late stages of such lesions might be firm fibrous strictures, but the earlier stages might be noted, roentgenoscopically, as localized areas of irritability and annular filling defects.

4. The lesions are essentially concerned with the lymphatics. For this reason, in particular, they are susceptible to roentgen therapy. The initial doses must be small, only fifty or 100 r, and the application of the irradiation must be at intervals, with protraction over a period of one to three months. With intelligent precautions, the patient

need not be incapacitated from average physical activity.

5. The development of fistulous tracts should establish determination as to continuing roentgen therapy. The treatment portals, of course, should be of minimal dimensions, but the glands as well as the sinus tracts should be included.

**SURGERY—GENERAL AND
ABDOMINAL**

By **BATTLE MALONE, II, M.D.**
1400 Monroe Avenue, Memphis

Progressive Postoperative Gangrene of the Abdominal Wall. Henry J. Vier, M.D. Surgery, 7: 334, March, 1940.

Progressive postoperative gangrene occurs usually following the drainage of a peritoneal abscess, a lung abscess, or a putrid empyema. This now definitely established pathological entity occurs very rarely, only about forty cases having been reported in the literature. It usually begins during the second postoperative week as a painful area around a retention suture. It has a carbuncular appearance, with pain, redness and swelling, and early necrosis of the skin. Conservative excision of the gangrenous tissue is to no avail and the lesion continues to advance, producing ulceration surrounded by an area of purplish gangrenous skin. Outside the border of gangrene is an area of marked erythema. Hyperpyrexia is uncommon, but the wound is intensely painful. Ordinary treatment such as antiseptics do not halt the progress of this condition.

Effective treatment consists of radical excision of the whole process outside the zone of erythema followed by the immediate application zinc peroxide. This drug after sterilization is mixed with sterile distilled water to produce a paste, having the consistency of forty per cent cream. The entire surface must be covered with this preparation. Then a double layer of fine mesh gauze is soaked in the suspension of zinc peroxide and placed over the involved area. This in turn is covered with gauze or cotton soaked in sterile distilled water. The whole dressing is sealed with vaseline gauze to prevent evaporation. The dressing is changed every twenty-four hours and the wound irrigated with saline and the process is repeated. After the formation of granulations in ten to fourteen days, pinch grafts may be applied.

The essential organism causing this condition is a nonhemolytic micro-aerophilic streptococcus. Usually hemolytic streptococcus and staphylococcus and staphylococcus organisms are found in the gangrenous portion. Experiments have shown that there is a synergistic action between these bacteria. This condition must not be confused with the un-

dermining ulcerating type of infection due to micro-aerophilic hemolytic streptococcus. These burrowing tracts extend deeply and there is no accompanying gangrene. Neither does this condition depend on symbiotic growth with hemolytic staphylococcus.

UROLOGY

By **TOM R. BARRY, M.D., F.A.C.S.**
By **G. A. WILLIAMSON, JR., M.D.**
Medical Building, Knoxville

Granular Urethritis in Women. Harry M. Spence. J. A. U. Association, South Central Branch, 1939.

Previous writers have recognized pathology in the urethra as being responsible for many urological complaints in the female. The findings in this report are in accord with their findings.

Analysis of 118 adult cases are given in this report. The ages varied from twenty-two to seventy-five years, with an average of forty-two years.

The following complaints were given:

	Cases
Frequency -----	101
Dysuria, burning, and urgency-----	96
Nocturia -----	74
Sensation of incomplete emptying-----	43
Referred pain -----	37
Gross hematuria -----	10

The average duration of symptoms was three months, but varying from two weeks to a year or more. A history of gonorrhea was given in only two cases.

The catheterized specimen of urine was normal in seventy-eight cases. Grade one plus pus or more was present in thirty-two cases, gross hematuria in eight, and microscopic blood in three. Five of the cases with urinary findings had upper urinary tract pathology.

On cystourethroscopic examination the following were the findings:

	Cases
Stricture of the urethra-----	6
Urethra tight -----	39
Normal calibre -----	73
Cystic or polypoid masses-----	73
Granular urethritis -----	118
The bladder was normal in-----	48
Cystitis was present in-----	34
Edema of the trigone in-----	27
Trabeculation in -----	7
Cystitis cystica in-----	2

The treatment consisted of urethral dilatation at weekly intervals until a number thirty-one F to thirty-four F sound was reached, and destruction of the cystic and polypoid masses by fulguration. Symptomatic treatment with drugs, sitz baths, and hot douches may also be instigated. Cleaning up of foci of infection, particularly in the cervix, teeth, tonsils, and sinuses is helpful.

The following results were obtained by treatment:

	Cases
Of the urinary symptoms cured.....	48
Improved	43
Unimproved	6
Cases cured with referred pain.....	8
Improved	22
Unimproved	4

These writers also report granular urethritis in fifty female children varying in age from three to fourteen years, the findings and treatment being the same as that in adults.

BOOK REVIEW

The Vitamins. A Symposium Arranged Under the Auspices of the Council on Pharmacy and Chemistry and the Council on Foods of the American Medical Association. Imitation leather. Price, \$1.50, postpaid. pp. 637. Chicago: American Medical Association, 1939.

This book is a collection of papers previously published in the *Journal of the American Medical Association* as a series of special articles by different authors under the auspices of the Council on Pharmacy and Chemistry and the American Medical Association.

It gives a detailed discussion of each of the vitamins known to be concerned with human nutrition, their chemistry, physiology, pathology, pharmacology and therapeutics, sources, methods of assay, and human requirements. There are, in addition,

chapters on pellagra whose relation to various vitamins is as yet uncertain and a chapter on less known vitamins. Each subject is presented by an author pre-eminent in his field which makes the book an authoritative presentation of present-day knowledge of the vitamins. An introduction by Morris Fishbein, editor of the *Journal*, describes the progress of our knowledge of the vitamins and presents the attitude of the Council on Pharmacy and Chemistry toward the practical application of this knowledge as it relates to preparations intended for therapeutic purposes. There is a large and well-chosen bibliography.

It is impossible in a field which is changing so rapidly as that of the vitamins to present in a book of this kind the very latest developments. This is illustrated in this book in the discussion of nicotinic acid and riboflavin in relation to pellagra, many recent studies of which had not appeared when these articles were written. This is compensated for, however, by the critical and considered judgment of the great number of published studies which have appeared so rapidly in recent years. The large number of contributors has led to some overlapping and duplication which, nevertheless, is valuable because of emphasis and the contrasting point of view. All in all, the book is the best and most complete presentation of our current knowledge of the vitamins, their chemistry, function, physiological and pathological relationships, requirements, therapeutic and clinical significance which is available today. To all who are interested in vitamins, and this means all physicians, the book will prove of inestimable value.

J. B. Y.

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Volume XXXIII

May, 1940

No. 5

AN AMERICAN HEALTH PROGRAM*

NATHAN B. VAN ETEN, M.D.,† New York City

THANK YOU very much, Mr. Chairman, for your flattering introduction. Away back in the era of Babylonian culture, practitioners of healing arts were compelled to organize themselves for the protection of the public from the deceptions of charlatans, quacks, and fakirs.

Living under various codes, a cohesive idealism carried them through the centuries until about 2,000 years ago medical organizations were crystallized by the followers of Hippocrates, and the altruistic traditions of the Hippocratic code have been cherished with rare fidelity and are dominant today.

The Hippocratic code has survived the explosions of successive theories of the science of medicine, and still lives as the foundation of medical ethics.

Within a few weeks, 5,000 young graduates from medical schools in America will listen to a reading of this ancient document and will raise their right hands and swear to uphold it. Very few of them will fail to keep this obligation as their consecration to the service of the sick. However divergent their ideas concerning the manner of this service, all physicians stand firmly upon this ancient rock.

The evolution of organized medicine in America dates from the founding of the first hospital by Benjamin Franklin in 1752 in Philadelphia. A group of physicians, forming themselves into a hospital staff,

merged their individualities into an organization which promised to deliver medical care to the sick poor.

Soon afterwards medical societies and medical colleges were started, and American medical education began to replace European medical education. All of these establishments represented local efforts working independently. Consequently, there were very uneven standards of quality until the organization of the American Medical Association in 1846, when a federation of medical societies was erected, and a serious attempt was made to bring the levels of education and of the practice of medicine up to the highest standards of the time.

The American Medical Association has worked at this job steadily through its Councils on Medical Education and Hospitals and on Pharmacy and Chemistry. Its Judicial Council has jealously guarded the ethics of all practitioners and has been a constant stimulant to an unfailing idealism.

The democratic organization of the American Medical Association gives each one of its 116,000 members a voice in its affairs. Its House of Delegates, representing every state and territory, originates and strengthens its policies and elects officers who are obligated to obey its mandates.

As a direct result of ninety-four years of hard work, medical education and medical service in America is the best in the world. Health statistics are unsurpassed and constantly improving.

In spite of this undisputed record, there are political theorists and amateur philoso-

*Read before the Tennessee State Medical Association, Chattanooga, April 9, 1940.

†President-elect, American Medical Association.

phers who would substitute European systems of health administration for this American evolution which has such rich vitality and promises still greater attainments through devoted service to the American people.

Contrast the American with the European scene. Germany is no longer the mecca for advanced education. The masters have been driven out by the lash of paganism, and medical education has lapsed below mediocrity. The medical course was cut to two years in 1939, and quacks and nature healers were legalized. For more than half a century, the course of compulsory health insurance has been destroying initiative and the high quality of German medicine. Mass medicine is poor medicine, and red tape makes a very poor surgical dressing.

In spite of more than half a century of poorer and poorer medical care which has been endured by the German people who have been under the heel of one form of autocracy after another, I do not believe that the German scientific spirit can be crushed. Too long, Germans have been good students and have given humanity epoch-making discoveries of the greatest magnitude.

Even now, out of this most depressing European mess, has come the unfolding of chemotherapy in the instance of sulfanilamide. Germans discovered it; French students developed it; English and Danes and Americans are perfecting it. Let us hope that honest, scientific effort will restore to the German people the right to be considered as human beings instead of herded cattle. Our present American success is the accomplishment of professionals working in a liberal democracy—of physicians and other scientists who work at it every day, but who are neither satisfied nor complacent about it. American physicians want to make American medicine so much better that there can be no justice in stories of neglected people anywhere in this country, that there can be no justice to support claims that thousands of people suffer and die from diseases that are curable and preventable, that thousands of young mothers

die from lack of medical care, and that thousands of children fail to grow into strong maturity because of failure of medic-social techniques.

All American physicians know that large numbers of people live miserably because they lack proper food and shelter and are consequently poor health hazards. They know that thousands in the city of New York are so crowded in vile tenements that they are denied healthy decencies.

Are American physicians sufficiently aroused to enter upon active local crusades against local pestilence? The doctor must take more than a superficial interest in local political machinery if he would improve the health and happiness of his community. Community units are the foundation stones of this democracy. The doctor can be a potent force in making these stones strong enough to carry a civilized structure.

The general practitioner is one of the most valuable citizens of this republic. His potentialities for leadership must be revitalized. He must regain his old place as counselor and confessor, and the people must demand his leadership.

By and large, the general practitioner is competent and conscientious, and while his continuing education is necessary, our greatest problem in this country is a continuous campaign of public education to make our citizens so health-conscious that they will seek early treatment while cure is possible and while catastrophes may be prevented.

Education has consistently lowered the vital statistics of tuberculosis. Education has salvaged thousands of children from destruction by diphtheria and other communicable diseases. Public health education in personal hygiene, in the care of the skin, the mouth, the teeth, the digestive functions, in the values of foods and the values of sanitary housing and social hygiene, in the prevention of destructive disease through venereal infection, in eugenics, in thoughtful human mating, serious study of social science with the hope of reducing the number of insane who fill more hospital beds than all other sufferers from all other diseases. A study of the whole man by all

practitioners of healing arts, a study of the individual in his home and diagnosis of his illness and treatment of them on the spot, investigative thinking upon all these problems by all our citizens would undoubtedly yield incalculably large dividends in the health of the American people.

Medical organizations have been working for years to improve the quality of medical service to all our people, and I believe that they will continue to carry on their concerted efforts to save our people from quacks and incompetents, in spite of accusations of criminal violation of business laws. Physicians are learned professionals, giving service regardless of fee. They are not merchants of health selling medicine, or formulae, or instruments, or cures. They are so earnest in the quest for means to relieve human suffering that they give their discoveries freely to all the world. They have no desire to restrain anyone in the pursuit of their ideals, providing they are doing it honestly, in conformity with established ethical standards, and in the best interest of the sick. They are the privileged servants of the sick, and the fee is not their master. They are not in business. They are, in a large sense, educators of the public conscience, valuable leaven in the ferment of social progress.

For twenty centuries their adherence to the Hippocratic tradition has led them to survive the crashings of many civilizations. This spirit will carry them to continued distinguished service long after the legal technicians have strutted their brief moments in the limelight and have been forgotten. Readjustments will be made of professional activities in order to digest unpalatable reactionary theories of public service.

The profession of medicine, including dentistry and the professions of law and the ministry of religion, will rise above persecutory technicalities and, in their honest pursuits, will continue to raise the level of general understanding of moral and physical values in the United States.

These professions will continue to try to serve at all social levels, from indigency to comfort levels, to the best of their ability. They will not refuse to work at night or

Saturdays or Sundays or holidays. Their ears will not be deaf to cries for help before nine o'clock in the morning or after five in the afternoon. They will continue to need public support, but they will not relax their efforts even if the public fails them. They will exercise a priestly privilege to try to lead American citizens to a high appreciation of their good fortune in living in an advanced democracy, a democracy created by the genius of George Washington, guided by the scientific genius of Benjamin Franklin, and the organization genius of Thomas Jefferson, who must have thought of the health of the people when he advocated life, liberty, and the pursuit of happiness. I hope and believe that the professions will keep that popular demand nailed to the masthead and it will still be flying there when your children's grandchildren come into their inheritance, and that it will inspire them to continue the processes of evolution to the realization of physical, mental, and moral health for the American people.

American physicians are justified in a pride of conquest over disease, but they must not rest upon their laurels. While new percentages are reported for tuberculosis, for diphtheria, for the casualties of maternity, and for all diseases of children, the statistics of degenerative diseases, of insanity, and of preventable communicable disease cannot be taken lightly. Too many hearts are breaking under modern strains; too many people between the ages of thirty-five and sixty-five are limping along with incapacities; too many cases of smallpox—nearly 15,000 in the United States last year—and increasing at an alarming rate because public health authority is not obeyed. General paresis and other syphilis of the central nervous system accounts for very large proportion of the tenants of our state institutions, every one of which is crowded from ten to fourteen per cent beyond normal capacity.

These and contributing economic conditions are stirring the medical profession to demand new organizations of health services for the American people, and are ex-

pressed in the new platform of the American Medical Association.

Acting under the authority of the House of Delegates of the St. Louis session, the trustees wrote a new eight-point platform, upon which American medicine stands for objective realization of the desires of 116,000 physicians.

The essentials of this new platform of the American Medical Association are coordination of government health functions; governmental provision of funds for disease prevention and relief of uncared-for sickness on proof of need; development of local responsibility for local demand and local control of administration; and encouragement of the private practice of medicine as far as possible in harmony with maintenance of a good quality of medical care.

In 1875, the American Medical Association asked for a secretary of health in the cabinet of the President and has timidly restated its desires at various sessions of the House of Delegates, after which the delegates went home to practice medicine and forgot about it. Last year, in the first session of the present congress, on March 6, 1939, Mr. Pfeifer introduced a bill to establish a department of health. This bill was referred to the committee on expenditures in the executive department, where it still reposes. It was, however, a first step in the National House of Representatives toward coordinating the health functions of our national administration which are now scattered through many separate bureaus and major departments.

If local health departments have proved their value, if state health departments have become indispensable, why has a national health department been so long postponed? Coordination of all federal health agencies except those of the army and navy seems a logical thing to do. The health of our people should be the honest concern of the chief executive, and the health authority should be a member of his cabinet.

I would like to see a new national department to be known as the Department of Health, headed by a secretary who must have had a medical education and be licensed to practice medicine. I would like this new department to include the follow-

ing bureaus: First, Public Health; second, Infant and Maternal Welfare, to be transferred from the Labor Department; third, Rehabilitation of Veterans; fourth, Research; fifth, Licensure; sixth, Care of Indigents; and other divisions to care for all other health responsibilities, fusing all departments into one less expensive to operate, and eliminating the confusion of overlapping and duplication.

I believe the President should have the benefit of scientific advice in health and hygiene within his official family. Defense against disease is quite as important as defense against the ideas and domination of foreign enemies. It seems to me to be timely to drop complicated and slipshod methods and attack the problem courageously and efficiently.

Infant and maternal welfare developed in the Department of Labor in response to a wide outcry against child labor. Its objectives have been largely realized and now requires a wider and more general type of direction.

Rehabilitation of veterans, developed through a well-known administration scandal, under a stimulated, emotional campaign, is now well established.

Hospitals are widespread and may well have a broader significance with the passing of time under a department of health. Appropriations for research are now vested in the Bureau of Public Health and in appointed committees. I believe that the values of such work would be greatly enhanced if these studies were coordinated in the departments of health where voluntary agencies, such as medical schools, voluntary hospitals, and philanthropic foundations could cooperate in directly helpful service for the information of the government. The National Board of Medical Examiners might fit into the function of a national health department. Medical care of indigents looms as one of the most important functions of government. A concert between local agencies, through some new type of local, state, and national machinery, could well be headed in a national health department.

The migrating indigent is one of those for whom no local agency is willing to

assume the responsibility. They are pushed from state to state and travel from one seasonal employment to another. No health insurance scheme can take care of such people who can make no regular contribution to any compulsory or government financing. Their care must be centralized. Would there be a better place for this work than in a national health department? It would seem to be ideal to choose a career man to head this department, someone who has been developed through the present Department of Public Health or through service in some of the state administrations. Examinations of the current personnel in the various states shows a real need for more competent health officers.

Service in the various fields of public health should be carried on by career persons who should be developed through special postgraduate training beyond the ordinary undergraduate course in medicine. Although it must always be borne in mind that a period of private practice seems to be necessary for understanding intimate, personal, medical problems, there is reason to feel that those who are to direct public health administration should be specially trained in the science of administration before entering such a field. Too often the health officer is merely a political appointee because he has influential friends, rather than because he knows anything about the duties of the office. He should also be made conscious of the fact that he is only an administrator and not a practitioner of medicine. The public consequence of private practice may need government umpiring, but government participation in private practice must not be tolerated.

I believe that the secretary of health should be a physician who has had enough experience in the practice of medicine to have the viewpoint of the patient as well as that of the physician. He should not be a political theorist who cannot know medical care of the sick because he never practiced it.

There is evidence of a concerted drive for a general service to the sick, both preventive and curative, supported by taxation and under governmental control. There is

frequent reiteration of a desire for free medical care, patterned after free public education. All doctors would be salaried by the state, a complete system for state medicine. There seems to be no limit to the belief that the public purse will be able to pay for it, even in the presence of evidence that state education is already too costly for the public pocket. Regardless of the fact that school budgets are now the subject of acrimonious debate, and regardless of the mounting national deficit, in the State of New York last year, education absorbed forty-three per cent of the state budget of \$385,000,000. State education takes care of people from the ages of five to twenty-one only, while state medicine would involve the care of people from before birth to interment.

Prohibitive costs mean nothing to some political theorists. A new program must provide something better and simpler than these excursions into Utopia unless we are ready to accept complete totalitarianism. I believe that an American health program should operate from the periphery toward the center. I believe that needs for health should be discovered in the smallest political subdivision, such as the school district, then referred to the township, to the county, to the state, to the federal authority, in that order, and that the federal authority should be called upon as infrequently as possible.

I believe that medical service to the economic indigent is the problem of the taxpayer. The economic indigent may be defined as one who is unable to provide the necessities of life for himself and his family. I believe that medical service to the medical indigent is the problem of the taxpayer. The medical indigent may be defined as one who cannot pay for medical care without sacrificing the necessities of life to himself and his family. I believe that medical service to these two classes of people should be administered by the medical profession and that the physicians who do this work should be paid by the taxpayer.

I believe that medical service to other people of low income who are able to pay for ordinary, but not for catastrophic illnesses, should be shared by the medical pro-

profession and the taxpayer. The medical profession and the taxpayer should provide such needed medical service in tax-supported institutions, either free or at minimum rates.

I believe that new mechanisms for caring for the health needs of the people, involving all political subdivisions, from the locality to the federal government, should be developed no faster than administrative personnel can be sufficiently trained to be effective.

I believe that preventive medicine, although largely a public health problem, involving the control of communicable disease, should be promoted by all practicing physicians, upon whom should be imposed definite civic responsibility.

I believe that every effort should be made to provide for the average man so that he can prepare for emergencies without throwing himself upon the sources of charity.

I believe that budgeting for sickness through insurance, providing cash indemnity, should be encouraged, as well as insurance against the cost of hospitalization, but that these two forms of insurance should be separate projects. Compulsory systems of sickness insurance as now operating do not take care of indigents and are only interested in workers who pay for insurance of this type through pay roll deductions.

I believe that the sentiments of groups of religionists who object to compulsory medical care through insurance or otherwise should be respected so long as their beliefs do not jeopardize the public health through neglect of ordinary health precautions for themselves or the community. Neither creed nor race nor color should deprive any American of the benefits of the best of clinical medicine, but the manner of its delivery should evolve from simple formulae. The formulae should grow from the needs of the people as recognized by the family physician, the public health nurse, and local welfare workers. The formulae should grow into workable being, in an orderly way, which will require a period of time for short steps before long strides are taken.

Much laboratory work must be done as recognized by the President in his recent

proposal to build small hospitals in regions where they are needed. This proposal is in harmony with the new platform of the American Medical Association. It is a sane alternative to the extravagances of the proposed Wagner Health Act. It is a stimulant to local initiative to operate a facility, erected by the government, for the benefit of the locality. It is also in harmony with the President's private statement on more than one occasion that he is opposed to any extension of state medicine that can be avoided. It is an immediate forward step toward correcting faulty distribution of medical facilities and may prove as attractive as are many hospitals to young physicians who may be seeking new locations.

The memory of an internship in a hospital furnishing every convenient facility is often disturbing to a young doctor's response to calls to country practice where he must be self-dependent. It is to be hoped that these new hospitals will be placed in response to well-established local needs.

At the invitation of the President, the committees from the American Hospital Association, from the Catholic Hospital Association, from the Protestant Hospital Association, and the American Medical Association met the President at the White House on January 10. The committee reports the President seems to be opposed to the enactment of the Wagner bill, and apparently intends to propose to congress that a sum approximating \$10,000,000 be appropriated for the purpose of building small hospitals in places where there appears to be great need of hospital facilities.

Under the plan proposed by the President, the federal government will build the hospitals, but the community, with or without state aid, will be required to maintain these institutions. The President stated that such hospitals, when built, will not be placed in undue competition with other hospitals.

There was little discussion of details at this conference, although some felt that there should have been more of such discussion since the practicalities of the situation seemed to demand it.

The following statement of principles was read at the conference with the President and, if our understanding of his attitude is correct, he indicated definite approval of all the principles involved in the statement:

"1. Hospitals to be built only where need for the same can be shown. Advisory consultation in the determination of such need to be given by the state medical and hospital associations, the state health department, the county judges or officials of the counties in which such hospital services are proposed.

"2. The size of hospital to be commensurate with the needs of the community and the ability of the latter to support it.

"3. Means for the maintenance and upkeep of such hospitals rank in importance equal to that of construction.

"4. Since the important objective of the program is the service it can render, hospital construction and administration, equipment, staff and personnel should meet the standards which the American Medical Association, the American College of Surgeons, and the hospital associations regard as minimal for rendering such service in the various localities where needed. Since highly specialized facilities and personnel cannot be made available in all places, affiliation with larger hospitals or hospital centers should be had, to the end that highly specialized services, diagnostic and therapeutic, be made available to all.

"5. Maintenance of a standard of professional and hospital service that will keep it efficient and prove attractive to qualified men and women as a career.

"6. Utilization of existing facilities where possible. Under no circumstances should the program be allowed to develop into competition with the voluntary hospitals, but should, rather, foster cooperation between the two groups.

"7. Many small communities can be better served by the utilization of bed vacancies in available existing institutions than by the construction of new hospitals, transportation, and per diem expense to be borne by federal, state and/or county funds. If state or county funds cannot be provided,

such expense could be met by federal grants in aid to be dispensed by local agencies. Ambulance service and good roads will permit this type of service to operate safely, efficiently, and economically in communities not financially able to support a hospital."

It is interesting to note a growing interest in and support of the new program of the American Medical Association. Senator Taft has expressed the hope that the Medical Association or some of its friends could introduce a bill into congress embodying those basic principles. Other legislators have joined in the opinion that this is desirable.

Senator Burke violently opposed the Wagner health program. From a powerful force within the administration has come the utterance of the Federal Security Administrator, the Honorable Paul McNutt. Speaking before the National Health Council on February 15, 1940, I quote a few paragraphs from his speech which reflect a new line of thought in Washington:

"No program addressed to a few diseases or a few age groups or a few economic groups can possibly reach our ultimate objective which must be to attain the highest possible level of health for all of our people. One important means of reaching this objective is the unification and coordination of health agencies at the federal, state, and local levels.

"The American Medical Association and the American Public Health Association have recommended the integration of health services at the federal level under one cabinet officer, preferably a Secretary of Health.

"A first step has already been made for functional coordination by the creation of the Federal Security Agency, of which it is my privilege to be administrator. Functionally, the agency is the beginning of a combined department of health, education, and social welfare. There still remain important public health agencies now being carried on by other departments of the federal government, although these same conditions in the state are administered by a single agency.

"Our objective must be to attain such

integration of health activities that we shall no longer deal with human beings as cases of infectious disease or cancer or pneumonia, as sick babies or sick youths or sick old people, but as whole individuals, living in families that make up the 130,000,000 people of the United States of America.

"There has been a general agreement as to the objectives of this bill, but some question as to the sums of money involved (that is, the Wagner health bill) and considerable criticism of its administrative provisions.

"Frankly, as an administrator, I have been seriously disturbed by the dispersion of federal administration proposed in this bill. As you know, the bill gives responsibility to the Children's Bureau for medical care of children, Public Health Service for medical care of certain high-cost illnesses, and to the Social Security Board for diseases other than those for which the Public Health Service is given responsibility.

"It is my firm belief that the first objective of the bill should be to coordinate the federal health activities. I fail to see how a national health program can be administered adequately with three federal bureaus making grants for the control of different diseases and different groups in the population. Confusion and duplication of effort is bound to result at federal, state, and local levels. Not the least confused will be the ultimate beneficiary whose health problems are artificially segregated according to his age and the nature of his illness.

"It is a medical job we have to do in a national health program. I feel that the outstanding medical agency of the federal government, the United States Public Health Service, should do it. It has a long and honorable history of achievement in the administration both of preventive and of curative medicine. Its relations with the state authorities form one of the finest patterns of state and federal relationship. Through a system of twenty-six marine hospitals, the service provided over 2,000,000 days of hospital care to cover 65,000 in-patients in 1939.

"The accomplishments of the National Institute of Health in extending knowledge

of how to prevent and cure disease are well known.

"Recently, President Roosevelt sent a special message to congress recommending a first step toward a national health program. He proposed the construction of hospitals in rural and other needy areas not now provided with those facilities. The President emphasized that the hospitals should not be constructed in communities where public or private institutions are already available. He recommended appropriations to the Public Health Service of between \$7,500,000 and \$10,000,000 which, with the help of the Work Projects Administration, he estimated would build and equip some fifty hundred-bed hospitals.

"The President realizes that the hospital is the cornerstone of modern medicine, the doctor's workshop. Without a hospital, adequately staffed and equipped, a community must be content with horse-and-buggy medicine and kitchen surgery.

"Today young doctors hesitate to go to rural areas because of the lack there of the tools of their trade. Instead, they go to the cities already overcrowded. The influence of a hospital extends far beyond the hospital walls and improves the quality of care in patient's home and doctor's office.

"In the areas the President has in mind, the hospital can also serve the additional purpose of providing laboratory and other diagnostic facilities for the use of local physicians as well as accommodations for local health department activities. This will bring about a measure of coordination of programs for prevention and programs for cure of illness. As the President said in his special message: 'This is not an ambitious project; it is an experiment, in the sense that the nation will gain some experience by undertaking such a project.'

"I am confident that even this limited undertaking will bring substantial returns in the saving of lives, rehabilitation of workers, and increased health and vigor of the people."

To implement the President's proposal, an enabling act was introduced in the senate on February 1 by Senator Wagner and Senator George. The President's proposal

should have the hearty support of all physicians and public health workers. The President inspires us to travel a road to the future. His action indicates a belief that it is untimely that radical changes in national medical care should be precipitated, while catastrophic clouds hang over our own nation, and while the map of the world is being remade and a peaceful federation of nations seems impossible. The world is at war and we may be involved.

Although many of us were officers in the war twenty years ago and some of us are now reserve officers, and all of us desire peace more than anything else, we are ready to take our places in support of the nation, if a real emergency arises.

Supporting this sentiment, the American Medical Association has already offered all

of its organization resources to the government and is ready to cooperate to the limit of its ability.

The American health program has been writing itself for 188 years, since Benjamin Franklin opened that first hospital in America in 1752. The American Medical Association has been motorizing this program for the last ninety-four years, cherishing an ambition not only to conserve all of the verities and values of this medical evolution, but the projection of them into new objectives, for the delivery of better and better medical service to the American people.

If American physicians must have an objective slogan, let it be: "Better Medical Care for Every American Citizen."

WHY MEDICINE?*

W. O. BAIRD, M.D., Henderson

CUSTOM, THE DICTATOR, decreed scores and scores of years ago that at each annual meeting of our great association an address should be delivered by the president. Perhaps, in years gone by, this was an essential safety valve for the escape of pent-up oratory, giving freedom to the flow of pet ideas and fantastic dreams. At times no doubt but what much interest was manifested, on other occasions the enthusiasm aroused was of insignificant importance. However, in a large percentage of all such events, honorary mention has always been given Hippocrates and those loyal disciples of his following him in the succeeding centuries. This, I presume, is due to the reverence in which he is held by medical men.

The historical events of our profession are usually presented, and it is well enough, for the repetition of these cause greater admiration for the pioneers who long ago passed through the gates of eternity.

Pioneering in an address of this nature is entirely possible, yet it seems somewhat unusual, for most discourses deal with the progress made and the problems of the day.

Contrasting with the splendid and interesting scientific presentation on the day's programs, when our minds are focused on matters of discovery, technique or experiences, we find ourselves not tense and rigid with attention, but relaxed and amiable, receptive to the generalities as offered.

The privilege of selection of one's own subject makes possible a choice permitting much discursiveness.

The title now introduced, "Why Medicine?" runs through and appears to connect with my subject at various intervals, tolerating an abundance of latitude and magnitude for whatever thoughts coming to the surface, colorful or otherwise.

To the young man or woman in that glorious and glamorous age, when the stars

and moon and sun are allied with youth, romancing away the halcyon hours, dreaming by night of worlds to conquer, and whispering by day those tender and passionate phrases into each other's ears, while both are exuding that ineffable something, the ardor of the mind, there comes to them while in this state of ecstasy a decision to make.

And like the clouds passing rapidly and gracefully across the skies, perhaps at times casting a shadow, though temporary, then with that faith characteristic of their years, they build higher and higher their castles in the air.

Some have already reached the momentous decision, having answered the question, "Why Medicine?" for their life's profession.

We of an older generation may reminisce along those pleasant paths of memory as strolling through a garden of roses or along the trails of the azalea, recalling the influences, the environments, the kind loving and helpful advisers, and, at last, our own conclusion as to the choice of our life's activities, the goals desired and the ports of destiny.

Many of us have traveled on the journey for past a quarter of a century, and during this period of practice we have encountered obstacles of tremendous resistance, complications, and reactions, driving us from the charted course, but, with the determination to navigate the repellant forces, we have succeeded in returning to our routes and continuing the course as far as possible ere the shadows of evening fall.

Now at our age I wonder how many entertain regrets for embarking upon a medical career? Regardless of the degree of success attained, whether we have received the acclaim of the populace, recognition as a genius or only in the humble cabins of creation's poorest have our names affectionately whispered in silent tribute, there is a certain relationship between us all, a feeling of understanding, of sympathy, or

*Presidential address read before the Tennessee State Medical Association, Chattanooga, April 9, 10, 11, 1940.

ecstatic delight according to the stimuli perceived.

Truly the good fellowship, the intimacy, association, and communion among doctors is one of the richest rewards and most magnanimous recompenses to be obtained by any man.

This enchantment alone would be sufficient to sway me back into the paths of my chosen career, if only I could enter the ranks of youth and young manhood again.

I am truly grateful that my activity has occurred during the past thirty years, for this represents perhaps the most intense era of scientific endeavor, resulting in the discovery of more powerful agents of combat against disease; in fact, our armamentarium is increasing so rapidly that it is almost impossible to keep step with the progress.

That burnished scroll of time, recording the history of civilization, will have no brighter record than that of the advance of medical science during the past half of a century.

The rivalry between surgery and internal medicine has been most interesting throughout the centuries. Possibly in the early dawn of life, surgery was on a firmer foundation and not shrouded in so much mysticism as was medicine.

During the eleventh, twelfth, and thirteenth centuries, memorable on account of the crusaders, medicine was at its lowest level, its despair, its nadir, and surgery was at its highest peak for those times.

No doubt this state of affairs was due to the demands of war, battlefields became an amphitheatre of gigantic proportions, and from there the frantic and terrifying cry for surgery, pathetic in the extreme, was heard throughout the entire world. It offered opportunities for the ingenuity and dexterity of peace-loving monks, who, crude as they were, possessed the skill and experience of the era.

Then there was no time nor room for the care and treatment of medical cases, neurological, and dermatological complaints.

Again surgery triumphed when Crawford Long proffered it ether. Since then its

climb has been rapid, steady, and continuous.

Asepsis with anesthesia, the laboratories' aid, and improved diagnostic measures, such as the X-rays, metabolism outfits, etc., all contribute generously toward making possible the scientific approach and treatment of diseases, correction of abnormalities, both congenital and acquired. Particularly gratifying is the reduction of mortality in laparotomies and other major operations.

Today an operation, instead of a dream of horror, suffering, agony, and overwhelming fear of doubtful survival, is only another experience contemplated with a certitude of recovery and an assurance of comfort and ease with two weeks of cerulean existence as a pompous and petted patient in a modern hospital (surrounded by beautiful roses, jonquils, lilies, and azaleas smiling encouragement and testifying silently to the friendship of their donors).

Yes, it is a far and distant call from the soporific sponge and laudable pus to this era, from the barbers and monks who were the operators then to our modern surgeons.

Our admiration for today's surgeon is beyond the expression of mere words. Their records speak, their performances are heretofore unequaled, and it is with pardonable pride that the entire profession salutes the American surgeon as the greatest, most illustrious, and eminent of all the nations of the world.

The internest of today also occupies an enviable position. Using the five senses given him somewhat as used by physicians of antiquity, with the aid of instruments of precision, with assistance of technicians of ability, his diagnosis, to a great extent enhanced by mechanical contrivances, approaches perfection.

Improved indeed, more accurate and reliable, thus making the application of therapeutics far removed from primitive practices, mystery, superstition, and empiricism elevates the treatment to a scientific basis. The curative results are so uncanny, coming with such rapidity and startling certainty, definite and complete recovery being effected, we stand awed and fascinated, glo-

rifying such marvelous and apparently superhuman occurrences.

Those of us whom Sir James McKenzie delighted in calling general practitioners of medicine can testify to the accuracy of the above statements, when we consider the late methods of treating pneumonia with serums and sulfapyridine as compared with the usual procedures of old.

The reduction of the mortality rate in late years of this pathological condition from thirty to eight per cent is of much iatric significance, placing the drug on a pedestal of confidence. Belonging to the same group also, we have sulfanilamide, recognized as an indispensable and life-saving adjunct, a friend of man, and a deadly and destructive enemy to the streptococci germs, which have taken a heavy toll of human lives.

The arsenicals revolutionizing luetic therapeutics long ago justified their existence. The synthetic vitamins, once believed to be incomprehensible products of plants, now are revealed as new organic chemicals helpful to the health of mankind.

The chemist has made remarkable contributions, and medicine applies them with a humanitarian aim in an unusual, altruistic, and sacrificial manner.

Someone has written: "The structure of a molecule seems to the average man to be of little importance in its relationship to the saving of human life. When, however, a chemist moves one of the components of a molecule from one point in its structure to another, and thereby develops a drug with specific virtues against a disease that has devastated man for the last four centuries, the interior elements of a molecule then become of considerable interest."

The infrared light and electric currents which make diagrams of organic molecules, the multimillion-volt X-ray atom smashers that enable the research workers to acquaint themselves with same, and other inventions of such theoretical significance are really being utilized in a highly practical and humanitarian endeavor, all being for the benefit of man.

Due to such discoveries and procedures, we have accessible specifics for the daily

application and beneficial effects for those seeking relief of the ailments and complaints they might possess.

With an accurate diagnosis, the proper application of remedial agents, we are then better qualified to offer a responsible prognosis, which, from the patient's viewpoint, is of much consequence, and now should be much more reliable than the ones made by Babylonian priests, who first gazed at the stars, watched the flickering flames, and studied long the drop of oil poured upon the water before the fates spoke through these acts concerning the probability of life or death.

The illuminating chapters of ancient, medieval, and modern histories contain narratives of ignorance, wars, pestilence, catastrophies, life and death, and the rise and fall of empires, but to medical men the pages describing progress in our own profession, the conservation of human life, extinction of plagues, and extension of longevity are the greatest achievements in the advance of civilization.

Many diseases causing the depletion of population are now completely eradicated. Others are suppressed or circumscribed.

Life's expectancy a few centuries ago was twenty; now it is sixty-two. This is due to the marvelous and welcomed activities of the scientist who endeavors to combat disease, and his efforts appear dramatic when we contemplate just what the span of life may be in the centuries yet to follow.

Records indicate that the destruction of human life by wars is of relative small concern when measured with the prolongation of it, which has been attained by medical science.

Forty years ago the mortality rate for tuberculosis was 201.9 per 100,000 population; now it is 53.6 per 100,000.

Through this commendable improvement, it is estimated that 188,500 lives will be saved this year in America from this cause alone, and colossal indeed does it appear when we are reminded that it has been accountable for a greater depletion and devastation of the world's population than have all the wars of history combined.

Further, this year the prevention of deaths from tuberculosis will represent more than four times as many people as the number of American soldiers killed on all the World War battlefields.

Open the ledger and read it. It is worth while because formerly the mortality rate for influenza was enormous some forty years ago. It is estimated now that 117,000 lives are saved here over the old rate. Diphtheria's rate was 43.3 per cent, now two per 100,000, a saving of 49,400 lives annually. The typhoid vaccinations mean a saving of 44,200 lives annually. Deaths from pellagra have recently been reduced eighty per cent by the use of nicotinic acid.

From the multitudinous bureaus in Washington come many reports of discouragement—reports on most everything—but from the one of vital statistics comes a note of favorable interest; namely, there is shown a net reduction of mortality of 542 per 100,000 in fifteen maladies, against which medical science has made its greatest advance.

This represents a saving of 704,000 lives this year, as against the 1900 rate. However, in such diseases as cancer, cardiac disorders, cerebral hemorrhages, also suicides and automobile accidents, the mortality rate is 195 per 100,000 more than in 1900, thus we have a loss of 253,200 lives more than under the 1900 rate from these special causes. Deduct this from the gains of 704,000 and we have a net saving of lives this year over 1900 of 451,100. This is equivalent to the population of such states as Idaho, New Mexico, Arizona, or New Hampshire, quite a remarkable saving of human lives. Our death rates on the whole were lower last year than ever before. This and our morbidity rate not only compare favorably with those of other countries, but excel.

The life expectancy of our population, though greatly lengthened, should be, and no doubt will be, increased within the next decade. Intensive study and complicated experimentations in our research laboratories will be quite productive of praiseworthy results, both from prophylactic and therapeutic viewpoints.

We have yet an enormous loss of time and finances from illness; the economic deficit is huge; two million people in this country are sick every day; every four seconds night and day some person is admitted in a hospital as a patient. In other words, 21,600 patients are daily admitted into our hospitals.

It is our fervent hope that the disorders and abnormal conditions affecting man will gradually but surely be overcome and defeated as have so many in the past half of a century.

Medicine's proficiency today is not a mere coincidence, nor a miracle. Its evolution came about by a long process of planning, of study, and of thought.

Medicine chooses whatever it wants from all the sciences. All other professions lend helping hands whenever requested. Consider just where the nations of the world would be today if it had not been for the civilization and modernization brought about by medicine.

We all have the profoundest respect, regards, and praise for our former professors; our respective medical schools we remember with loyalty—all this is natural and is as should be—because, notwithstanding the handicaps as existed thirty or fifty years ago, remarkable results were obtained. However, the environments existing today are so entirely different, curricula have changed, requirements for entrance to medical schools are as obstacles which protect the classes from indolent or efficient students and keeps out many who are competent, yet, on account of the intense and continuous drive of class duties, are unable financially or otherwise to maintain an average grade permitting their continuation of the course. The administrative officers are universally agreed on one thing—the production of a superior class of doctors—thus the public is supplied with a decreased number of physicians, but those emerging with their degrees and conferred titles represent the best teaching facilities the world has ever known.

Premedical courses as required are offered by the great universities; aptitude tests are given; an accurate evaluation of

the student's qualifications, such as class records, attendance, personality, and industry are made; physical examinations are required; and much concern is given as to whether or not sufficient evidence is presented as to the sincerity, purpose, and determination of success, and the application to one's studies during the course.

Many apply for admission, but comparatively few are admitted. The University of Tennessee receives 2,000 applications yearly and admit 120. Vanderbilt matriculates fifty students, yet have applications from 900. Six per cent of those applying are received and ninety-four per cent rejected. This, I presume, is the condition of all medical schools, all having the same experience.

The marked contrast with admission requirements of thirty years ago is obvious. Now it is drama, then burlesque. For the only real requisite then was the tuition fee. Students came unheralded, unsung, and ill prepared. It has been said that fifty per cent entering never practiced medicine.

The quality and quantity of study has undergone metamorphoses. The clinical advantages obtainable through familiarity and contact with teaching hospitals and association with instructors is most helpful indeed.

After a four-year course in medicine and one or two years' internship, we have just cause and reason to expect a graduate surpassing those of thirty years ago.

John Ruskin wrote: "Each stone of the medieval cathedral bore the impress of the personalities of the workmen who chiseled it." Thus we might say that each medical graduate bears the impress of the personalities of the professors and instructors who teach him. Their responsibilities are great; their efforts most excellent.

The fact that all the countries of the world look to America today as the leader of discoveries, improved technique, high achievements, and greatest devotion to public health and welfare is due largely to the revised, reorganized, and superior medical schools of ours.

Through them, we expect our morbidity and mortality rates to be reduced and lon-

gevity extended; for the relation, inseparable between practice of medicine and health, happy years, the general welfare of society, the entire economic structure, both moral and spiritual standards, is startlingly recognized.

During the tenth century a medical school was established in Salerno. In 1224, Emperor Frederick published a decree regulating medical conditions of his empire, this being the first time medical practice was strictly regulated by law.

The right to exercise this profession was made dependent upon the passing of certain examinations. These were based largely upon the medical curriculum of the times, rather extensive, indeed, exacting three years' study of philosophy, five of medicine, and one of practice, then if successful in passing the examination a license to practice was awarded.

State regulation of medical practice in some parts of Tennessee today is 700 years behind in progress, some counties allowing men to practice who were never in a medical school. Perhaps this wretched condition is one of the fruits of political maneuvers. I am not prepared to state just how many so-called doctors are in the state, but personally I know some who have large practices and are quite busy men.

Their defiant attitude apparently affords them sufficient protection from any opposing forces. Unless the basic science law is enacted, this number will increase.

The fees received for professional services have varied always, but the Babylonians 2,000 B.C. regulated these by an established tariff specifying the charges according to the social standing of the patients. Some penalties, however, were recommended. In case of death from operation, the surgeon's right hand was cut off.

In Persia, before a surgeon was permitted to practice he had to perform three successful operations, not on Persians, but upon infidels.

In Rome, the court physicians received a salary equivalent to \$12,000 annually; others had incomes of \$35,000; special operations netted from \$2 to \$10,000.

Inscriptions reveal that medical societies existed centuries ago, then endeavoring to improve the physician's knowledge and to stimulate his zeal—perhaps the first ones in history.

Possibly there the presidential address was first imposed upon the membership, or maybe in lieu of this, and far better, it appears to me, they did as the medical societies of Ephesus—awarded prizes for the most brilliant cures effected or for the best and most useful surgical instrument produced by its members.

Throughout history medical men have been striving diligently, constantly, and continuously for improvement and progress. All through the ages this has been a marvelously colorful and illuminating theme. Those participating were men of refinement and education or experienced in long observations. They were respected and loved, entrenched in the esteem and affection of their fellow men, one of the answers to the question, "Why Medicine?"

Thus throughout the centuries physicians have played well parts assigned to them, receiving modestly and without ostentation any applause directed towards them.

Always have problems been with us, infinite in number, at times most perplexing and seemingly without solution, but usually disposed of in some manner. We have conquered difficulties of the past, emerged more vigorous and experienced for having had such.

Successes of life are usually material, intellectual, or emotional, and in all these forms our profession has shared most generously and unselfishly, and may it continue to do so along such courses as research and help us in problems of degenerative diseases; namely, heart affections, which last year accounted for thirty-nine per cent of the deaths of physicians in this country. Cancer is another enemy of mankind pregnant with distress, grief, and sorrow, wrecking the happiness of families, leaving orphans and loved ones in its path. Who will be able to solve its mysteries, free us from its tortures as did vaccination free us from the deadly clutches of smallpox or

sanitation and screening liberate us from the yellow fever and malaria?

Deadly as it is, hopeless, loathsome, striking both young and old, its toll is enormous, yet typhoid, diphtheria, pellagra, and many other pathological conditions once appeared to be without control, now their fatal touch has been removed by scientific medicine.

The debt and obligation of humanity to the latter is far beyond comprehension or computation of mere man; for the saving of a life cannot be computed on a basis of financial consideration.

As it has been written, "The mills of the gods grind slowly, but they grind exceedingly well," meditations on such true versions of life give us hope for something brighter to drive away the gloom and despair, to prevent and heal the cancer, make well again and strong the human body so effected. Surgery, X-rays, and radium have accomplished much, but the call for assistance, succor, and relief comes steadily, continuously, constantly, as definitely and loudly as ever such calls came from the battlefields. Something must be done—something will be done—to check the demon cancer.

Perhaps no one can completely solve the problem. One may initiate the solution, discover the key to it, yet inefficiently operate it. However, when once made known, hundreds stand by ready to be directed in the fight against the enemy.

The flag-bearer of scientific advance is the *American Medical Association*, the greatest medical organization in the entire world. All are conscious of its import, but comparatively few are fully acquainted with its true worth to each individual member, its power, strength, and watchfulness over the interests of the entire profession.

Many times have I, as you, been in Chicago, but until a few months ago I had never entered the American Medical Association building. While attending a states secretaries' meeting there, I was amazed to find such an institution where hundreds of employees are working steadily to further our cause.

The maze of activity, ease of efficiency, and perfection of services were astonishing

to me. Hospitality and courtesy reigned supreme in all departments.

May I urge upon each of you who have never inspected this plant to do so by all means upon your next visit to Chicago? It is yours. You will be proud of it, for it is another answer to the question, "Why Medicine?"

The divisions maintained are entirely too numerous to mention. Some are as follows: The executive department is presided over by Dr. Olin West, a Tennessean, the guiding power, a most affable and kindly gentleman. Those mechanically inclined would be fascinated by the battery of presses printing journals and periodicals.

The library contains thousands of medical journals on all subjects and awaits your request and pleasure in forwarding a package of clippings upon any subject in which you might be concerned.

The personal information bureau challenges one's attention, for there is found a complete biographic record of every physician in the United States.

When one matriculates in a medical school, his biography there is begun with certain data of his premedical work, then as he advances further information is added. This goes on through afterlife and is never closed except when death writes across his card the word *finis*.

There are many divisions too, important ones, all functioning for the betterment of our profession.

The editorial section produces the journal, which is no doubt the most unique of its kind in existence, penetrating all parts of the civilized world, containing invaluable information. Its issues reach near the 100,000 circulation, its efforts are to protect the public, educate the physician, and instill in him zeal and ideals of altruism, to advance the science and art of medicine, and shield it from unjust attacks.

In 1846, delegates met in New York for the purpose of organizing the American Medical Association. Its first meeting was during the following year, 1847, when 250 physicians attended. A reorganization was perfected in 1902.

When January, 1940, arrived this organization had 114,345 members, an increase of 16,301 during the last five years. It has fifty-four constituent state and possession organizations, 2,058 component county and district societies. Tennessee has ninety-five counties and only sixty component societies. Twenty-four counties possess no medical organization. We have 2,917 licensed physicians, 1,719 being members of the State Medical Association. These figures are as of 1938.

It would take many hours to read the record of the American Medical Association and comment upon a few of its encounters with patent medicine vendors and quacks, its fight along pure food and drug avenues, and the many other activities in which it has been engaged during the past decades. Now we see it in full action in its gigantic conflict with new deal theories, federalized or socialized medicine, and those engrossed with such beliefs, the Roachites so-called.

One of the most important advances in medicine was instituted when the American Medical Association took up the fight for better medical schools. Years ago these schools were operated in a very crude manner, no cooperation, uniform regulations, or requisites as to conduct or admission of students.

Many were commercialized, owned by private individuals, some of unwholesome and unsavory reputations. At one time there was a total of 176 schools in the United States teaching medicine, almost as many as in all the other countries combined.

At present, resulting from the American Medical Association efforts, we have seventy-seven class A schools graduating 4,200 physicians annually. The first medical school was established in 1768 at Columbia. The first hospital was opened in 1663 on Long Island. In 1890, there were 400 nurses graduating; last year 22,500.

During this period of transition we have seen the ratio between specialists and general practitioners considerably disturbed. It is said that seventy-five per cent of medical students now choose a specialty before entering their senior year. This estimate may be incorrect, yet we feel a great ma-

jority of present-day graduates specialize, then precipitate, and flocculate into the larger centers of population, and thereby hangs a tale—the real cause of the Wagner excitation—the tocsin of federalized medicine. This alarm has been extremely agitating to some who are aglow with grave apprehension; others are more apathetic. It may become a menace or some good may evolve from it in the end, some refinements, adjustments, and changes made that may be beneficial.

But why all the excitement for what may happen? Why not open our eyes to what we already have?

The Harrison Anti-Narcotic Act, a federal act completely and absolutely enforced. This, however, is a worthy act, so far as I know, fully endorsed by the profession, yet it shows how accurately and permanently the government can control us.

Think of the hospitals of this country, some 7,000 having approximately 1,000,000 beds. Seventy-three per cent of these beds are controlled by federal, state, or municipalities. In other words, 730,000 beds are operated by so-called state medicine ownership, 270,000 otherwise being conducted.

The veterans are becoming aroused over the fact that hospitals built for their benefit and treatment and the expenses of same charged to their account are being used for the hospitalization of WPA workers, CCC boys, civil service employees, postmasters, etc.

Under these conditions it appears to me that we already have federalized medicine, and how amusing it is to read the summary of ballots recently enumerated by some journals purporting to show that eighty-five per cent of doctors would refuse to take any part in a socialized medicine program or would refuse to cooperate in any manner with it.

Of the number of doctors, reputedly to be some 20,000, who voted or responded to the questionnaire, how many, may I inquire, are already taking part in socialized medicine or cooperating with it fully 100 per cent?

How many receive monthly checks from the government for services rendered to in-

jured WPA workers and other government-sponsored agencies? The fees are designated by the government and usually are lower than those prevailing in the community in which the services are rendered. What about the farm security agencies, where the government most graciously, generously, and liberally condescends to allow or permit a doctor to contract to do the entire practice and furnish medicine to some farm family of two or three or eight or ten for a whole year, subject to call at any time, day or night, for any reason, whether it be a headache, splinter in toe, smallpox, the birth of a baby or death of a great-grandmother, typhoid or pneumonia, or just heartbreaking hysterics, all of these services, with whatever medicines might be desired, to be furnished for the munificent sum of from twenty dollars to thirty dollars.

When this rare specimen of contract was proffered to the doctors of my county by some of the higher-ups of the agency, not one would accept the proposition. This, I believe, is a fair example of just how the federal government would treat the physicians of the nation if it only had complete control.

Congressmen and senators receiving \$10,000 per year might be induced to allow the physicians \$1,000 or \$2,000 per year for their services. It has never occurred to them that we cannot sell our time for thirty cents per hour.

Yes, we already have in a modified form federalized medicine, and, in my humble opinion, eighty-five per cent of the doctors voting their refusal to have anything to do with socialized medicine are already cooperating with it in some form or other, and furthermore if it should become stronger, these same doctors would be on the first waiting list for appointment, so why make rash statements? Be temperate in speech.

Statistics are usually dull and uninteresting, but, please, just for a moment, may I quote a few in order to justify another comparison showing just how much an average citizen pays for things not included under the cost of medical care? In these United States of ours, the greatest nation under the sun, we spend annually \$12,000,000,000

for motorcars, parts, and gasoline; \$4,000,000,000 for tobacco; \$2,000,000,000 for sugar, sweets, ice cream, and candy; \$3,000,000,000 go to the movies, and \$2,000,000,000 for radios.

We smoke 135,000,000,000 cigarettes, buy 80,000,000 decks of cards, and have one motorcar for each four and one-half people. Now, listen, for medical care we spend \$3,800,000,000. Of this sum \$750,000,000 is paid the doctors, \$700,000,000 to the hospitals and nurses, \$375,000,000 for patent medicines, and \$125,000,000 go to osteopaths, chiropractors, and what have you.

We have 150,000 doctors, 130,000 of whom are in active practice, 150,000 graduate nurses, 100,000 practical nurses, and 60,000 pharmacists all willing, ready, and anxious to render efficient medical care whenever needed or called for, sought, or demanded.

The doctors of this country contribute services of \$1,000,000 daily. Each doctor will in an average lifetime give of his services \$100,000, a sum but few other men earn in a lifetime, still the public pays more for movies or tobacco or sweets and radios than for medical cost.

Gentlemen, one answer to the hue and cry of inadequate medical care is the huge consumption of nonessentials. Another is the migratory movement of physicians to the cities, specializations.

A few years ago in a Chicago medical school, where there was an enrollment of 225 students, the question was asked: how many of you plan to practice in rural communities? Those answering in the affirmative numbered five.

Unequal distribution is another answer. In California, there is one doctor for each 571 people; in South Carolina, one to each 1,400.

Now, since it is estimated that ninety per cent of diseases can be treated by the general practitioner, and since 128,000,000 of our 130,000,000 population are within less than an hour's ride to some hospital, why should there be so much cogitation for federalized medicine? The simplest plan of all, the least expensive for the taxpayers, is to convince medical students that rare

opportunities exist in rural communities, and, if necessary, subsidize some to render care in communities from some cause or other that are wholly unable to finance their medical costs.

The cities and most towns are already supplied with medical men. It seems that in certain isolated sections there exists a scarcity. One more point to be considered, during the late war, one-third of those examined for service was found to be defective either physically or mentally, not due to inadequate medical care as now shouted from the housetops, but to ignorance and indifference and unconcern about their own welfare.

More care would be given if sought for, better and more intensive treatments rendered if full cooperation was received from the patients.

Personally, I do not know of a single case in private practice where good medical care could not be obtained when needed, do you? However, I am sure in some sections where there are no doctors such an occasion might well arise. I believe these sections to be relatively few in number.

President Coolidge stated that the great body of American population is able to secure adequate medical attention. Only in remote quarters such attention cannot be provided. It is true those words were spoken some thirteen years ago, before adjustments began to materialize, in the days of security and independence. Now it is different. Although men are working fewer hours per day, fewer days per week, yet receiving more pay than ever before, still there are about 9,000,000 men unemployed, a pitiable situation indeed.

The economic and political problems are in the hands of others for solution. It is ours to solve the medical ones, and, to my way of thinking, the best way to do this is to give our whole support, moral and financial, to the American Medical Association and the National Physicians Committee for the extension of medical service.

These organizations represent us. They stand for all that is good and just for both the profession and the layman. The program of the American Medical Association

is a splendid one, but I shall not intrude upon the next speaker's subject by going into this program.

I feel that the medical profession realizes the needs of the rural sections and will supply same, thus eliminating the necessity for government concern or apprehension, dictation, or interference.

With 3,000 years of faithful service rendered by it to the public, I feel that confidence if disturbed will be restored, that better and more efficient work will be accomplished, and that we as physicians, though we may not come out of the scramble intact, yet we will emerge with our self-respect, the love and esteem of our fellow citizens, that the practice of our profession will be as absolutely colorful and full of absorbing interest as at present.

I should like to report to you activities engaged in last year. Governor Cooper requested me to serve on a committee designated as an advisory committee on medical care of the state's wards. Dr. J. H. Francis of the University of Tennessee and Dr. Hugh Morgan of Vanderbilt University were the other committeemen. The three of us served, of course, without remuneration. Much travel was necessary (our expenses were paid by the state). Perhaps all of you have already read the newspaper comments of this work. Briefly, we mention some of it. Our duties carried us to the penal, correctional, and mental institutions, where approximately 10,000 state wards are residing. After an inspection and investigation of the medical care given the wards in the penal and correctional institutions, our committee deemed it advisable to make an immediate report and suggest some emergency measures thought necessary. This was done, and, as far as I know from the daily news, these suggestions were given immediate attention. To go into full details of our findings would require an entire evening, suffice it to say that many deplorable conditions were found that we believe now have been corrected. This committee was not faultfinding with the employees as a whole, but rather with conditions that had in a great measure existed for some time. We had fullest cooperation

of all contacted with hospitality and courtesy extended us everywhere.

I am convinced that the present administration is in sympathy with any movement improving the medical care of the state's wards. The governor feels deeply the state's responsibilities and duties to the men, women, and children in its custody. The health problems of these unfortunates are not unlike those of other states.

As our committee concluded that the most desirable and necessary attention should be given to the mental institutions, I shall give a concise statement on same. Approximately 6,000 inmates are the patients hereby considered, and the majority of these are purely custodial in nature. It has been intimated that forty per cent of this number might be improved under proper treatment, yet the statistics show that only eight or nine per cent are showing any improvement—how wide the difference between what may be done and what is done. There is no doubt but what under more favorable conditions a greater number of recoveries or improvements should be effected. We are not criticizing the respective staffs, for they perhaps feel the inadequacy of sufficient means to operate as they wish. They are all undermanned or understaffed; an insufficient number of personnel to secure the better results; the physical assets are all inadequate; many new buildings are needed for the proper care and maintenance of residents.

In my opinion, some of the old precedents and customs should be abolished if we expect to progress with the times. For instance, the entire setup has a political complexion not compatible with the rendition of the best possible service for those under the state's care and protection.

When hundreds and hundreds of employees are hired and fired every two or four years, according to tenure of office of the appointing power, usually without regard to experience or service, then we but feel that such a custom is detrimental to the welfare of those in custody.

This lack of security and continuity of position is so outstanding that even the

key offices are wholly unattractive to the best-qualified physicians who might be induced to accept responsibilities with such hospitals.

The belief of others who have given this problem much study is accepted by us, that "Tennessee makes an inadequate distribution of state's revenues to the mental institutions"; further quoting, "only 1.8 per cent of Tennessee's funds are given over to the care of the mentally ill compared to 6.6 per cent to 13.2 per cent so given by other states."

Until more funds are allocated or a larger percentage of revenue assigned for this purpose, we cannot expect improvement.

Until the complete withdrawal of professional personnel from the political arena and some form of civil service is adopted for the attendants and other employees, we cannot expect any degree of improvement.

In our estimation, one of the essentials to make possible the greatest improvement of medical care for the unfortunates is to establish diagnostic clinics and hospitals at the university centers. This suggestion has been made previously, and I fully endorse it and beseech the State Medical Association to give it your deepest thought and study. By this means, we could have better psychiatric diagnosis and a training center for medical students, psychiatrists, nurses, and attendants which would be available for the mental institutions of our state. Thus better and more modern treatment would be instituted.

Some few months ago one of your Chattanooga newspapers became interested in the mental hygiene problem. Their articles in print were most interesting indeed. It was suggested that a committee for mental hygiene in Tennessee be organized and the public informed of the existing conditions and needs. I wish to endorse this measure also. It is a splendid move in the right direction.

In order to emphasize the importance of mental hygiene, may I call your attention to the fact that there are over 500,000 cases of mental disorders in our hospitals today? It is said that insanity

is probably increasing during the past fifty years something like 300 times faster than the population.

Seven thousand babies are born in the United States every twenty-four hours. Of this number one in every twenty-five will become insane, four in every twenty-five will become profoundly neurotic, four moderately neurotic, four mildly neurotic, and only twelve in every twenty-five will be fairly normal.

I am advised that in New York City as many are committed to mental institutions annually as are graduated from college. There is a certitude that Tennessee has about the same record.

Gentlemen, please bear in mind these particular thoughts concerning our mental problems; give them your consideration and deepest study. With the influence of this association endorsing any beneficial movement towards improving our mental situation, we should be able to do something worth while for the unfortunate victims now confined and restore to mental equilibrium those who are today on the borderlines of insanity.

Regardless of who may or may not be in power in Nashville during the next meeting of our legislature, let us as individuals insist on all who may aspire to office that they use their efforts towards benefiting our mentally ill.

It is our simple duty, for truly we are our brother's keeper in his hour of gloom and despair. If we as physicians do not heed his call, who will?

Truly the profession of medicine demands much sacrifice: the absence from home and loved ones; long, tedious hours both day and night. Skirmishes and battles are fought against disease and death. We see kaleidoscopic changes from sorrow, grief, and agony to joy, happiness, and restoration to health.

On occasions we are overwhelmed, dejected, and despondent when the Grim Reaper ignores our valiant efforts, then again we play a part in the salvage of human wreckage, the saving of a life. One victory means much against that inevi-

table enemy, eventually succeeding against all humanity.

Our successes are in alleviation of pain, restoration of health, prolongation of life, but in the end all science recognizes that our patients may pass through many competent and excellent examinations during their terrestrial existence, and finally are called to the celestial clinic, from whence no one has yet returned.

The medical profession has received ovations. Poets have written of it most affectionately. In the hearts and minds of men its image is hallowed. It is steeped with a humanitarianism reaching from the lowest depths to the highest stars in the firmament above us. It is endorsed, esteemed, and is the ray of hope shining brightly in the darkest hours of distress, for what else is offered to man, diseased and dying, but his physician and his God?

Medicine is the flame of science. In all its branches men have dedicated their lives, concentrated their efforts for the love, welfare, health, and happiness of mankind. We should, like the vestal virgins, tend well the light, protect and shield it

from the dangers besetting, preserve the blaze, that its brilliance may shine until time shall be no more. With appropriate apologies to Bob Taylor, I might say:

"If I were an artist and could express my thoughts upon canvas to be interpreted by all the generations to come, to be admired and to inspire, I would not paint a conquering hero with his sword hanging by his side, nor a Croesus with lines of disgust across his features, nor would it be a king dressed in robes of purple with a crown of gold or a queen in royal dress of scarlet with a diadem upon her head.

"But I would paint with fervent hands a man with dignity, poise, and expression, not of scorn, but patience, sympathy, and understanding."

You would be impressed by his unassuming pose, and in his eyes you would see that indescribable something, winning confidence and giving assurance, a certitude of purpose. I would either place around his neck a stethoscope or in his hand a scalpel and the title of this painting would be in glittering gold, "Why Medicine?"

GAVEL PRESENTATION

CHAIRMAN ZEMP: We have at this time the pleasure of presenting this gavel to our retiring president. Doctor Baird, this gavel is presented to you by the Tennessee State Medical Association. It can either be your tombstone or it can be an inspiration to you which, when used to knock at the door of the organization which has given you the greatest honor that is within its power, will lead you on to greater opportunities of service which your mature intelligence should make you better qualified to perform.

If you are just satisfied with having attained this high honor and go into that oblivion where

The woodbine twineth and the whangdoodle
Moaneth for its first born

you will be like a great many other presidents that have gone down before you. I doubt if you yourself could mention the president of this association five years ago. They have a habit of disappearing after their term expires, which is a very bad habit.

This gavel has your name engraved upon it. Therefore, it is not like the tombstone that the little boy tried to get for his father. He said he tried awfully hard to get a tombstone for his father, but every one he tried to get had somebody else's name on it. This gavel has your name on it.

It is just a piece of wood, but a piece of wood can become animated, as illustrated by Charley McCarthy, who is the greatest piece of wood in the world today. This piece of wood, instead of being a tombstone, can become an inspiration to you when you look at it, and urge you on to better and greater service to the medical profession than you have ever given before, and we need it. The medical profession is just as much at a crisis as are the small nations of Europe today. We are in the act of being assimilated and exterminated and ruled as slaves. We are not going to do this, and we expect you to do your part in keeping us from becoming slaves.

You are in your prime, but the medical profession is at a very vigorous age. I do

not want you to be like the old gentleman who was going to get married, and he said he was going to marry a very young girl. The old black mammy in the family resented it. She said: "There can't nothing good come out of that wedding. You is too old for that gal."

He said: "Mammy, I am just in my prime."

"Yes, that's true," she said, "but when she gets in her prime, where is your prime going to be?"

So, you had better stay in your prime, for we are going to get in our prime pretty soon, and we hope to find you on the front line fighting the battles of the medical profession just as you have done in the past year.

I hope this gavel will bring you a great deal of pleasure and happy remembrances and good luck. It is a pretty good nutcracker, so don't let it get in the hands of your wife.

PRESIDENT BAIRD: Gentlemen, in the presentation of this gavel, Dr. Zemp certainly has imposed upon me great duties. It reminds me of what happened over in Chester County at a negro meeting we had. One of the visiting brothers came to propound the gospel. After he was in a weaving way, he stopped for a few minutes to get his breath and called upon one of the local negroes to pray, and this he did as follows:

"Oh, Lord, help these sinful niggers; help this minister of God. Come, we need you. Come yourself, Lord. Don't send your Son Jesus Christ because this is not a boy's job."

I appreciate this gavel, and I appreciate the words said to me by Doctor Zemp. It is like the lady who goes out into the garden to make a bouquet. He can take a beautiful word here and a beautiful word there and bind it in all of its color and all of its beauty and all of its grandeur into phrases, and then add more beautiful words, and he presents you with a beautiful bouquet.

I thank you very much. I appreciate it. I shall always treasure it and remember very kindly the words of inspiration given

me by Doctor Zemp. I appreciate this for the fact that it is the work of an artist who is a very good friend of mine, and he, no doubt, in making this, had in view many thoughts of organized medicine, for that is very dear and very near to him in every way.

At this opportunity may I take the privilege of saying to the members of the Tennessee State Medical Association that I thank you for your full cooperation during the tenure of my office which now is about to expire.

I am under many obligations for the cooperation offered by all, to the secretary for his help from time to time, and to his

assistants who have advised me on different things, and to the ex-presidents; in fact, I believe every member of the Tennessee State Medical Association would rally around the cause for help at any time it was sounded.

I am profoundly proud of, and thankful for, the great association of Tennessee. With all due regard to our distinguished visitor here this evening, though his state has an association many, many times the size of ours, I believe down in the depths of his heart, from his visit here today, he would not say, except in numbers, that it was superior to the Tennessee State Medical Association.



DR. LEONARD WRIGHT EDWARDS
President, Tennessee State Medical Association

The New President

DR. L. W. EDWARDS was born in Carroll County, Tennessee, October 17, 1888. In his early days he lived on a farm, attending the district school of his county until the age of eighteen, when he entered Southern Normal University at Huntingdon, Tennessee, and remained at this institution during the years of 1906-1908.

After deciding to study medicine, he entered the Vanderbilt Medical School at Nashville, Tennessee, in 1908 and graduated with honors in June, 1912.

Immediately after graduation he became associated with Dr. Duncan Eve, Sr., and Dr. Duncan Eve, Jr., in the practice of general surgery. He continued this association until 1915, when he opened an office of his own and began the practice of surgery alone. In 1938, he and Dr. Duncan Eve, Jr., again became associated in the practice of surgery.

From the beginning of his professional life, Dr. Edwards was interested in teaching. He served first as demonstrator in the Department of Anatomy and assistant in the Department of Surgery in the Vanderbilt Medical School the year following his graduation in medicine. In 1916, he became an assistant in gynecology and was elected a member of the surgical staff of the Vanderbilt Hospital. In 1925, he was made an instructor in surgery in the reorganized Vanderbilt Medical School. At the present time he holds the position of associate professor of clinical surgery at Vanderbilt.

Soon after the declaration of war in 1917, Doctor Edwards volunteered his services to the army and was commissioned a first lieutenant in the Medical Officers Reserve Corps. He was ordered to Camp Greenleaf, where he served as instructor in anatomy and surgery in the postgraduate school, which had been organized at this post by Major Edward Martin. He was later transferred to Camp McClellan, where he served until the end of the war.

As a result of Doctor Edwards' professional ability and attainments he soon became a member of the attending staff of the Vanderbilt Hospital, St. Thomas Hospital, and the Nashville General Hospital, and in these positions he rendered invaluable service to each of these institutions.

Early in his professional life Doctor Edwards associated himself intimately with the activities of organized medicine, becoming a member of the Nashville Academy of Medicine and Davidson County Medical Society, the Tennessee State Medical Association, the American Medical Association, the Southern Medical Association, and a fellow of the American College of Surgeons. As a result of his activity and interest in the Nashville Academy of Medicine and Davidson County Medical Society, he was honored several years ago by being elected its president.

Doctor Edwards' interest in and service to the Tennessee State Medical Association is shown by the fact that for several years he served as a member of the House of Delegates and also as counselor, and for the past eight years has served as chairman of the Association's Legislative Committee—a position requiring not only time and effort, but ability as well. As to how capably he has filled this position, the record speaks for itself.

That Doctor Edwards' life and his associations have been well rounded is shown by the fact that he is a Mason, a member of the Phi Chi Medical Fraternity, the Belle Meade Country Club, and the Nashville Chamber of Commerce.

Doctor Edwards' unselfishness, sterling character, tenacity of purpose, when convinced he is right, and his fairness both to colleagues and the public, have endeared him to those who have had the opportunity of really knowing him, and it is the knowledge of the existence of these traits of character that make one prophesy for him success in his executive capacity during the coming year and to realize even more how fortunate the Tennessee State Medical Society is during these troublesome times to have such a person as its leader.

J. O. M.

THE JOURNAL

OF THE

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H. H. SHOULDERS, M.D., Editor and Secretary

MAY, 1940

THE ISSUE

SHALL PATIENTS AND DOCTORS RETAIN THEIR FREEDOM OF JUDGMENT IN THE MATTER OF MEDICAL CARE, OR SHALL THIS FREEDOM BE SURRENDERED TO SOME GOVERNMENTAL AGENCY?

EDITORIAL

THE CHATTANOOGA MEETING

The meeting at Chattanooga provoked a great deal of favorable comment by members who attended.

The attendance was relatively large as compared with previous meetings in Chattanooga.

The scientific program was of high quality. The numbers, in the main, dealt with questions of immediate interest to the profession. The papers were especially well prepared and every number listed on the program was presented. A few discussers were absent, but most of them sent in explanations and regrets.

The scientific exhibits were good and the commercial exhibits were especially good.

The entertainment features were good indeed. All these factors made the meeting instructive and enjoyable.

It certainly can be said that no practitioner of medicine can hope to keep abreast of the times and fail to attend these meetings.

The work of the House of Delegates was conducted with as much dispatch as is possible for the volume of work that must be done. Each new year brings forward some new problem or some new phase of an old problem which should be acted upon with deliberation, and this requires time.

The success of the meeting is attributable to a number of influences and agencies which had a part of its planning and execution. The local committee on arrangements functioned with exceptional efficiency, and those who had to do with planning the program, in our opinion, did the best they could under the circumstances.

BOOTLEGGING IN MEDICINE

There is now, and there has always been, a small amount of bootlegging going on in medical practice.

The word "bootlegging" is meant to refer to the practice carried on in an illegal manner. These practices create a great deal of disturbance at times in the regular profession of medicine, probably more than they should.

It seems appropriate that we doctors do some clear thinking with regard to our relationships to the state, to the public, and to the bootlegging doctor.

In the first place, it is necessary to understand that the medical profession sponsored the creation of standards of educational requirements to be met by all who would practice medicine. The standards were set up by the state. A board of examiners was created to execute the law.

An applicant who satisfies the Board that he has prepared himself in accordance with the standards set up, and from an examination is found to be qualified, is issued a license to practice. The word *license* should never have been used in this connection. The more appropriate word would be "certificate of qualification," for the simple reason that the word *license* does not carry with it such significance to the public. Licenses are issued by the state for a number of different purposes. For example, a man is licensed to sell groceries, or liquor. The purpose of such a license, in the main, is to collect a tax, and to prevent a person

from engaging in such business without paying a tax. Such a license is in no way related to qualifications of the person or concern to engage in the business.

The issuance of a medical license, however, is on another basis entirely. The purpose of the professional license is to certify to the public that that person has pursued the course and stood the test prescribed by law and been found qualified. It is in reality a certificate of qualification. This policy was inaugurated in Tennessee by the legislature of 1889. It is pursued for the purpose of protecting the public against the hazard which necessarily attaches to the practice of those who have not pursued the course and would not dare subject themselves to a test. It is a fact, however, that some people refuse to be protected against a fraud.

Such a license is not issued merely as a protection to the doctor, who is licensed, against the competition of the man who is not licensed. This whole setup has origin in the idea of protecting the public against a fraud in medicine.

We hold no brief for the person who engages in any form of bootleg practice. It should all be stopped. At the same time, we must not be blinded to the fact that the public, in many instances, is ignorant of the fundamental idea back of this process and, being thus ignorant, their reactions to attempts on the part of organized medicine to stop illegal practices are not what they should be.

It is necessary also to bear in mind the fact that we live in a democracy. We believe in the principle of local self-government. We believe in the preservation of the principle, even though the local government, at times, may do the wrong thing. We believe that the wrongs that a local government may do are small in comparison with the wrongs which a *dictator*, however capable, might do. This fundamental idea must also be borne in mind at all times.

It has been said, and we believe it to be true, *that the quality of medical practice in any community can never rise above the level of the appreciation of the people of that community for good medical care.*

There are people, and they are not ignorant, who prefer the care which Christian Science offers. To deny such people the privilege of such care might produce a good result in the individual, but at the same time, it might produce a disastrous reaction as a result of the loss of freedom.

We believe that there is need for public education as to what good medical care consists of and as to what has been done to protect the people against the hazards of poor medical care.

Just recently the death of a child occurred in the state without medical attention. There was no medical attention in the case because the parents of the girl did not believe in doctors. They were members of a religious sect which holds to the belief that it is sinful to call a doctor.

From a doctor's viewpoint, this is a tragedy. At the same time, for doctors to undertake to take action to correct this condition by invoking a law to compel these people to employ a doctor, when they do not want a doctor, might bring a still greater tragedy, for the simple reason that the action would be misunderstood. Doctors would be accused of taking the action from selfish motives. Doctors would never be given credit for doing it from a humanitarian standpoint.

The same general principle holds with respect to bootlegging medicine. Informed and educated lay people with a sane appreciation of the value of good medical care must lead in the fight to rid a community of such bootlegging.

When we doctors initiate such action, it seems always to be misunderstood.

It is well for us to remember that medicine has made slow, but definite progress through the ages as the result of enlightenment. The enactment and enforcement of laws has been an important, but a secondary factor. We still must look to enlightenment more than to law in achieving future progress. Laws are necessary, and will continue to be necessary, but their enforcement is not possible except as enlightenment leads the way.

D E A T H S

DR. W. A. BRYAN

Dr. W. A. Bryan, Nashville, Vanderbilt University, School of Medicine, Nashville, 1899; aged sixty-seven; died suddenly on April 30, 1940.

Dr. J. B. Woodruff, New Orleans; University of Tennessee, College of Medicine, 1900; member of Tennessee State Medical Association; aged fifty-seven; died April 24, 1940.

R E S O L U T I O N S

RESOLUTION AND TRIBUTE TO DR. J. B. PHILLIPS

In his home on March 7, 1940, at 5:40 A.M., in Shepherd Hills, Chattanooga, Tennessee, the useful and brilliant career of Dr. J. B. Phillips came to an end following an automobile accident the night before, and there passed from our midst a forceful, courageous, tender, kind, cultured, modest, friendly, faithful, possessed of a sense of humor, simple, very temperate, loving and devoted husband, a good father, and a loyal friend.

His gentle, kindly soul reminds:

"We cannot say, and we will not say, that he is dead. He is just away with a cheery smile and a wave of the hand. He has wandered into an unknown land and left us dreaming how very fair, it needs must be, since he lingers there. And you—oh you, who the wildest yearn, for the old-time step and the glad return—think of him faring on as dear in the love of there as the love of here, and think of him still as the same. We say he is not dead—he is just away."

Doctor Phillips was a loyal, faithful member of the Chattanooga and Hamilton County Medical Society, the Tennessee State Medical Association, and Fellow of the American Medical Association.

He graduated with the Class of 1910 from the Louisville School of Medicine. He came to Chattanooga in 1929 after having done

general practice at Henagar, Alabama, to enter into his new field of pediatrics.

He was chief of the staff of Children's Hospital.

Doctor Phillips was born in Crossville, Alabama, in 1881, and is survived by his two sons, Harold Jackson Phillips, a student in McCallie School, and Dr. J. B. Phillips, Jr., an interne in Vanderbilt Hospital, Nashville.

Therefore Be It Resolved, That we have lost a loyal and valued friend and associate.

Be It Further Resolved, That we extend to his bereaved sons our sincere sympathy.

Be It Further Resolved, That a copy of these resolutions be spread upon the minutes, a copy sent to the sons of the deceased, and a copy sent to the State Society.

E. S. BLAIR, *Chairman*
L. P. BROOKS
R. M. COLMORE
F. B. STAPP
CLEO CHASTAIN
J. A. GENTRY

Approved March 14, 1940.

W. E. BRYAN, *President*

J. MARSH FRERE, *Secretary*

DR. J. B. PHILLIPS, SR.

Whereas, the staff of Baroness Erlanger Hospital and the medical profession has lost through death one of its most outstanding members;

Be It Resolved, That the staff of this hospital go on record as deeply regretting his untimely death. Dr. J. B. Phillips, Sr., was a man in whom the light of service burned brightly. He was keenly interested in his profession, and his sound common sense and personal integrity made him a man worthy of the highest praise. He will be sorely missed as a friend and a coworker.

Be It Resolved Further, That a copy of this resolution be spread upon the minutes of the Erlanger Hospital staff meeting, a copy to be sent to the STATE JOURNAL, and a copy to be sent to Dr. Phillips' two sons.

(Signed) JOHN W. HOCKER, M.D.
W. E. VAN ORDER, M.D.,
W. D. ANDERSON, M.D.

Committee.

DR. E. M. FUQUA

In the death of Dr. E. M. Fuqua, December 31, 1939, the medical profession of Giles County lost one of its outstanding members, and the county one of its outstanding citizens.

For twenty years Doctor Fuqua enjoyed an extensive practice in this community. His standard of professional service and conduct was on the highest plane. He was most ethical and fair with fellow members of his profession, and was respected and loved by all with whom he had contact.

The members of the Giles County Medical Society wish to express their deep regret in the death of this noble and splendid physician and man, and include in the minutes of the society this tribute to his memory.

(Signed) G. C. GRIMES
J. U. SPEER

RESOLUTION OF GIBSON COUNTY MEDICAL SOCIETY

After a short illness of a few days with coronary occlusion, Dr. L. H. Montgomery died at his home in Trenton, Tennessee, March 16, 1940.

He was born December 23, 1878, at Hendersonville, Sumner County, Tennessee, where he was reared and received his early education. He attended the Georgia College of Eclectic Medicine and Surgery of Atlanta, Georgia, where he graduated March 26, 1906. He first located in Trimble, Tennessee, and practiced there only a few months, moving to Riverside, Tennessee, in 1907, and continued to practice there until 1918, when he moved to Trenton, Tennessee, and continued in active practice until his death, March 16, 1940. Soon after moving to Trenton he joined the Tennessee Medical Society and was an active and faithful member until his death.

In 1933, he attended the postgraduate course at Vanderbilt University at Nashville, Tennessee, put on by the Commonwealth Fund. He was a typical Southern gentleman and a faithful member in his church and always willing and ready to do a kindness to his fellow man or to any one

who was in need, and in our society and community he will be greatly missed.

Be It Resolved, That we extend to his wife and children our sincere sympathy.

Be It Further Resolved, That a copy of this resolution be spread upon the minutes of our society and a copy sent to the family and also a copy sent to the State Society.

(Signed) B. T. BENNETT
FRANK A. MOORE

DR. B. B. SORY

Resolved, That in the death of Dr. B. B. Sory of Cedar Hill, Tennessee, the Robertson County Medical Society has lost an able and appreciated member whose precepts and example are worthy of emulation.

Be It Further Resolved, That, to his bereaved family and the community in which he gave forty-seven years of his life to the relief and care of suffering humanity, we extend our sympathy and assurance that when he passed through the gloaming of Gethsemane and over the crest of Calvary unto the Golden Glory of the Father's mansion he was greeted with, "Well done, thou good and faithful servant," enter thy reward.

DR. R. D. MOORE
DR. W. B. DYE
DR. J. S. HAWKINS
DR. W. W. PORTER

NEWS NOTES AND COMMENTS

Dr. H. H. Shoulders
Doctors Building
Nashville, Tennessee
Dear Doctor Shoulders:

This is just to advise you that this society and its members individually have contributed the sum of \$800 to the support of the National Physicians Committee for the Extension of Medical Service. A communication from Mr. John M. Pratt, executive administrator for the committee, states this is the largest contribution which has been received from any county medical society in America.

We are advising you of this as an item which we believe will be of interest to the

Mrs. Murfree appointed Mrs. R. N. Herbert as chairman of Courtesy Resolutions. National delegates for the June convention in New York appointed were: Mrs. R. N. Herbert, Mrs. W. O. Baird, Mrs. H. E. Christenberry. Alternates were Mrs. H. B. Everette, Mrs. Arthur Porter, and Mrs. W. W. Potter.

Following the business session, luncheon was served at Fairyland, with Mrs. C. R. Thomas as chairman. Interesting talks were given by Dr. J. B. Steele, Dr. W. O. Baird, president of the Tennessee Medical Association, and Dr. Jere Crook. In the afternoon a trip was made through Rock City Gardens. The final social function was the annual state dinner at the Chattanooga Golf and Country Club with Mrs. Paul Johnson, chairman, and Mrs. R. C. Robertson, toastmistress.

Mrs. Matt Murfree presented the Christenberry cup to Mrs. J. Travenick, Jr., president of Davidson County Auxiliary, and the Floyd cup to Mrs. W. O. Baird, president of Blount County Auxiliary.

Mrs. Walter S. Nash graciously presented the president's pin to Mrs. Matt Murfree, retiring president.

Mrs. Rollo K. Packard gave a most interesting and informative talk on the purposes, aims, and objectives of the Auxiliary.

Following the dinner a post-convention board meeting was held, presided over by the president, Mrs. W. T. Braun.

MEDICAL SOCIETIES

Anderson County:

The Anderson County Medical Society met in regular monthly session in Clinton on May 6 at 7:30 P.M.

Dr. S. R. Miller, counselor for the Second District, presented the matter of the consolidation of two or three small medical societies. He pointed out that the House of Delegates and counselors of various districts strongly advocated such consolidation, as it was difficult for the small societies to maintain active interest in their organizations, and that the combined membership of two or three of these small so-

cieties would lead to stronger and more active organizations. This matter was left for further discussion and action by the society.

Dr. Jack Chesney, pediatrician of Knoxville, Tennessee, presented a very interesting and instructive paper on "Certain Preventive Pediatrics in General Practice."

(Signed) J. S. HALL, *Secretary*,
Anderson County Medical Society.

Davidson County:

April 16—"The State Tuberculosis Control Program," by Dr. W. W. Hubbard. Discussion by Dr. W. S. Rude.

"Treatment of Chronic Leg Ulcer," by Dr. Henry Carney and Dr. Rollin Daniel. Discussion by Dr. George Johnson.

April 23—"Pneumonia," by Dr. Ogle Jones. Discussion by Dr. E. P. Johnson.

"Nonsurgical Treatment of Lung Abscess," by Dr. Hollis Johnson. Discussion by Dr. Clarence Thomas.

April 30—Members of the society were guests of the Union Ice Cream Company. A film was shown following the dinner, "Ovulation in the Human Subject Using Gonadotropic Hormone Obtained from Pregnant Mare's Serum."

May 7—"Gastritis—Investigation with a Schindler Flexible Gastroscope," by Dr. Jack Witherspoon. Discussion by Dr. Joe Alford.

Preliminary Report—"Investigation with Peritoneoscope," by Dr. C. S. McMurray.

Dyer, Lake, and Crockett Counties:

The Dyer, Lake, and Crockett Counties Medical Society met in regular monthly session May 1. Scientific program:

"Liver Abscess," by Dr. J. B. Cochran, Dyersburg.

"Corneal Transplantation and Eye Conditions in General Practice," by Dr. J. W. McKinney, Memphis.

"Congenital Syphilis," by Dr. T. M. Jordan, Alamo.

Our next meeting will be held Wednesday, June 5, at Boyett's Place on Reelfoot Lake. The scientific program will begin at 2:00 P.M. In the cool of the evening there will

be lots of fun, with country ham, fried chicken, and fish on the board. All physicians receiving the JOURNAL are cordially invited.

(Signed) C. L. DENTON, *Secy.*

Franklin County:

The Franklin County Medical Society had its last regular meeting at Winchester on April 26. At this meeting Dr. W. W. O'Neil gave a paper on "Ovarian Transplantation."

(Signed) H. T. KIRBY-SMITH, M.D.,
Secretary.

Knox County:

April 16—"Acute Hematogenous Suppurative Osteomyelitis," by Dr. Chas. F. Clayton. Discussion led by Dr. S. R. Miller.

April 23—"Leukemia," by Dr. Dan Thomas. Discussion by Drs. Ralph Monger, George G. Henson, and H. C. Long.

April 30—"Use of Diuretics in Bright's Disease," by Dr. E. R. Zemp. Discussion by Drs. Bruce R. Powers and George G. Henson.

Robertson County:

The Robertson County Medical Society met at Donelson on Tuesday night, April 17, as the guests of Dr. W. W. Winters, president, and Doctor Lee.

An inspection trip was made during the afternoon through the Home of the Feeble-minded, at which time Dr. J. P. Keller, Nashville, conducted a clinic in the wards and examining room.

Prior to the scientific meeting in the evening, the visiting doctors were guests at a dinner and were entertained with a musical program by a group of patients of the home.

Dr. J. S. Freeman, Springfield, was the essayist for the meeting, and his subject was "Typhus Fever." Dr. W. P. Stone, Springfield, opened the general discussion after the paper was read.

In addition to the members of the Robertson County Medical Society, others present included Drs. O. K. Hauk, W. M. McCabe, Elbridge Anderson, and J. W. T. Dabbs.

Sullivan-Johnson Counties:

The Sullivan-Johnson County Medical Society met on Wednesday evening, May 1, at the Hotel Bristol in Bristol, Virginia, with twenty-nine members and three guests present.

Dr. Roy M. Hoover of Roanoke, Virginia, spoke on "Low Back Pain," discussing inflammatory and mechanical causes and emphasizing complications in regard to workmen's compensation. After discussion by the group, Dr. N. J. Chew of Bristol gave a talk on the subject, "The Uses of Sulfanilamide and Its Derivatives with Special Reference to Pneumonia."

(Signed) C. F. N. SCHRAM, M.D.
Secretary-Treasurer.

Washington County:

The regular monthly meeting of the Washington County Medical Society was held Thursday, May 2. Dr. Troy Bagwell of Knoxville was our guest speaker. He discussed the treatment of compound fractures and the increased use of vitallium plates in internal fixation of compound fractures and the use of sulfanilamide prophylactically in preventing infection. He illustrated his discussion with films of numerous so treated cases.

Our next program will be Thursday, June 6, at which time a symposium on anesthesia will be held.

The society went on record as unanimously approving the work of the National Physicians' Committee, and individual contributions will be solicited and sent in.

The program scheduled for June 6 is as follows:

"Spinal Anesthesia," by Dr. H. B. Cupp.

"Intravenous Anesthesia," by Dr. Wallace L. Poole. Discussions by Drs. McBee and West.

(Signed) WALTER D. HANKINS, M.D.,
Secretary.

OTHER MEDICAL SOCIETIES

The Upper Cumberland Medical Society will meet May 28 and 29 at Cookeville. Dr.

L. M. Freeman of Granville is secretary of the society.

The Tennessee Valley Postgraduate Medical Assembly will meet October 10 and 11 in Knoxville.

The Southeastern Section of the American Congress of Physical Therapy Seminar will meet at the Atlanta Biltmore Hotel, Atlanta, Georgia, on May 20 and 21.

The fifth annual convention of the National Gastroenterological Association will be held June 4, 5, and 6 at the Hotel Roosevelt, New York City.

COMING MEETINGS

American Medical Association, New York, June 10-14. Dr. Olin West, 535 North Dearborn Street, Chicago, Illinois, secretary.

American Ophthalmological Society, Hot Springs, Virginia, June 3-5. Dr. Eugene M. Blake, 303 Whitney Avenue, New Haven, Connecticut, secretary.

American Proctologic Society, Richmond, Virginia, June 9-11. Dr. Curtice Rosser, 710 Medical Arts Building, Dallas, Texas, secretary.

American Psychiatric Association, Cincinnati, Ohio, May 20-24. Dr. Arthur H. Ruggles, 305 Blackstone Boulevard, Providence, Rhode Island, secretary.

Mississippi Valley Medical Society, Hotel Fort Armstrong, Rock Island, Illinois, September 25, 26, 27. Dr. Harold Swanberg, Quincy, Illinois, secretary.

Southern Medical Association, Louisville, Kentucky, November 12-15. Mr. C. P. Loranz, Empire Building, Birmingham, Alabama, secretary.

West Tennessee Medical and Surgical Association, Jackson, May 24. Dr. George R. McSwain, Paris, secretary.

Middle Tennessee Medical Association, Spring Hill, May 16. Dr. Fowler Hollabaugh, Nashville, secretary.

Tennessee Valley Postgraduate Medical Assembly, Knoxville, October 10, 11. Dr. Jesse C. Hill, Knoxville, secretary.

Upper Cumberland Medical Society, Cookeville, May 28, 29. Dr. L. M. Freeman, Granville, secretary.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By HUGH BARR, M.D.
Medical Arts Building, Nashville

A Comparison of Ether, Spinal, and Cyclopropane Anesthesia. J. C. Houston. Canadian Medical Association Journal, February, 1939.

For the past six years at the Prince Edward Island Hospital these three anesthetic agents have been about equally used. The author discusses their relative values under ten separate headings: (1) Safety: More alarming conditions arose during ether and spinal anesthesia than with cyclopropane. (2) Potency: All three abolish pain, but vary in their control of spasm. Spinal produces perfect relaxation; ether does when pushed and cyclopropane only in fifty per cent. (3) Control: Ether and cyclopropane being volatile are easy to control. Cyclopropane more so than ether. The level and effects of spinal anesthesia are much harder to control or untowards symptoms combatted. (4) Toxicity: The toxicity of all three need cause no special concern. Cyclopropane is to be preferred in patients with damaged livers and kidneys. (5) Comfort: Cyclopropane far surpasses the other two. (6) Complications: Ether has most, spinal next, and cyclopropane relatively few. (7) Simplicity: Ether is the much simpler anesthetic to administer. The technique of spinal appears easy, but it is not always as easy as it looks. Cyclopropane in the author's hands has proved to be as simple as ether. (8) Scope of Usefulness: As spinal anesthesia is limited to operation below the diaphragm, its range of usefulness does not compare with that of ether and cyclopropane, which can be used for any kind of operation not connected with the close proximity of a cautery. (9) Popularity: In the series upon which this paper was based, there were about as many cyclopropane anesthetics as ether and spinal together. (10) Cost: The cost of ether per case was about fifty-five cents, spinal between forty and seventy-five cents, and cyclopropane one dollar, not including oxygen.

DERMATOLOGY

By A. H. LANCASTER, M.D.
Suite 401 Medical Arts Building, Knoxville

Effective Treatment of Varicose Ulcers of the Leg. Ludwig Isaak. Archives of Dermatology and Syphilology, 41: 530 (March), 1940.

Isaak states that in order to clear up an ulcer it is necessary: (1) to eliminate the cause; (2) to stimulate the granulation of the ulcer; and (3) to improve the circulation of blood and lymph.

To eliminate the cause he recommends injection

method, but warns of its contraindications. It is his method of stimulating granulation tissue that appears valuable. Technic as follows: Protect the surrounding skin by a thick layer of zinc oxide paste. The ulcer itself is covered with a few layers of thin genuine silver leaf which is generally used by sign painters to paint silver letters on windows. The silver leaf can be purchased at any paint store, the American brand being recommended. The ulcer is then covered with a thick layer of cotton and bandaged tightly. The silver leaf treatment has a double effect, the airtight occlusion of the ulcer forming a wet chamber, a treatment formerly accomplished by adhesive strapping, and having also an apparent catalyzing effect. It is important to protect the surrounding tissues with zinc oxide paste in order to prevent maceration of the skin by the secretion of the ulcer. The cotton that has been placed on the silver leaf is used to absorb the secretion. The ulcer must be dressed every three to eight days according to individual needs. If there should be much secretion a burning pain will appear and a new dressing is indicated.

To restore blood circulation he recommends zinc-gelatin bandages (Unna's boot) from the toes to the knee. His article deals with technic of application, and advises that a window be cut in the boot to facilitate frequent dressing.

OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.
Suite 234 Doctors Building, Nashville

The Treatment of Bacteriemias with Sulfanilamide.
James R. Reinberger. *American Journal of Obstetrics and Gynecology*, 39: 618, April, 1940.

The treatment of puerperal bacteremia has been until recently an almost unsurmountable problem.

A survey was made by the author of five other institutions other than the University of Tennessee. The following facts were found:

Puerperal bacteremia is more common than generally recognized. During the period of this study, 1927 to 1937, 15,000 patients were delivered. There were fifty-four patients with positive blood stream infection, an average of 3.5 per 1,000. Hemolytic streptococcus accounted for thirty-four out of fifty-four organisms isolated. There were twenty-four deaths out of fifty-four cases, mortality 44 per cent. This study indicates that there has been a gradual, if not actual, reduction in ratio for type of therapy. Sulfanilamide alone or with transfusion seemed to offer a sense of security, which otherwise has been absent; in that, among the last nine patients treated with this drug, there were no deaths. The high death rate from puerperal bacteremia, despite the advancement of scientific medicine, indicates there is considerable room for improvement. A clearer conception of the bacte-

riology and pathology will aid materially; however, more can be accomplished by prophylactic measures. The avenues of invasion and multiplicity of the sources of infection in the parturient canal by the hemolytic streptococcus must be recognized. Blood transfusion and sulfanilamide bids fair to outdistance any remedies heretofore applied.

OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.
Doctors Building, Nashville

Observations on the Effect of Sulfanilamide Taken Internally for Trachoma. Robert Jebejian. *American Journal of Ophthalmology*, April, 1940.

In trachoma cases sulfanilamide in comparatively small doses has immediate beneficial effect on symptoms of irritation, lacrimation, photophobia, and blepharospasm. These symptoms disappear in large measure after about three days of treatment. Pannus is without doubt favorably influenced and begins to regress in a steady fashion with resultant improvement of vision. Keratitis and corneal infiltrations are also favorably affected. Conjunctival vascularization decreases appreciably, but hypertrophic lesions and granulations are not noticeably affected. Maximum therapeutic effect is attained in a few days and continuation of treatment after this period does not appear effective. Sulfanilamide has an active inhibition on the trachoma process and prepares the field for more effective treatment. Sulfanilamide is not a cure, but is a valuable adjunct and fills an important place, together with other standard treatments. In cases which are resistant to classical treatment, a short course of sulfanilamide is particularly indicated.

PEDIATRICS

By JOHN M. LEE, M.D.
Doctors Building, Nashville

Tetanus in Childhood, with Special Reference to Treatment. Harry F. Dietrich, M.D., Beverly Hills, California. *American Journal of Diseases of Children*, April, 1940.

Twenty-eight cases of tetanus in children from two to thirteen years of age admitted to the Children's Hospital of Los Angeles in the period, 1921 to 1938, were analyzed with special reference to treatment. From 1921 to 1932 there were fifteen cases, twelve deaths, mortality rate eighty per cent. From 1933 to 1938 there were thirteen cases, one death, mortality rate eight per cent. From his study of these cases the author feels that the high mortality rate in the first group was the direct result of the orthodox treatment with antitoxin.

All of this first group received horse serum intravenously or intrathecally or both. These were mild or moderately severe cases that walked into

the hospital for treatment. Eleven of the thirteen died within three to fourteen hours after they first received horse serum. It made no difference as to the nature of the wound, incubation period or duration of illness, all died within thirty-six hours of their first treatment. Every child who died showed a similar striking reaction within a few hours after treatment was given.

The usual clinical picture of tetanus with clear mentality, frequent tonic spasms, normal or slightly elevated temperature and pulse rate is suddenly changed to resemble some other disease with medullary pressure or edema. Coma, hyperpyrexia, extreme tachycardia, stertorous, and irregular breathing develop. The spasms cease, the face becomes ashen, extremities cold, and the child dies, obviously not from tetanus. It is felt that the immediate lethal factor appears to be medullary (and cerebral) edema due to horse serum because of the rapidity of the development of the clinical reaction after the administration of the serum intravenously or intrathecally. In six cases, in which autopsies were done, this edema was readily demonstrable.

In the second group of cases only one died, this one receiving only intravenous serum. All other cases in this group who received serum intravenously or intrathecally or by both routes had violent reactions, but survived. Only those who had serum only by intramuscular injection escaped reaction. One patient who had a frightening nearly fatal reaction a few hours after the intravenous use of serum returned to the usual clinical picture of tetanus when sedatives were discontinued and repeated doses of thirty per cent sucrose solution were given intravenously.

Sedation should complement serum in the treatment of tetanus. Seconal has proven a satisfactory sedative to the author. He feels that the ideal procedure in these cases is first to secure sedation, then in severe cases give one dose of antitoxin intravenously to neutralize the preformed unbound toxin. To neutralize any new toxin liberated give 10,000 to 20,000 units antitoxin into the muscle daily for two to four days. The focus of infection should be surrounded with antitoxin, opened widely, debrided, and left open. In the event of serious serum reaction sedation should be discontinued until the reaction has subsided.

Adequate food and fluid intake should be maintained, resorting to gavage if necessary, dextrose intravenously and normal saline solution subcutaneously.

SURGERY—GENERAL AND ABDOMINAL

By BATTLE MALONE, II, M.D.
1400 Monroe Avenue, Memphis

Surgery, Gynecology, and Obstetrics, 70: 792, April, 1940.

Among the numerous methods of treating leg ulcers, there remains one which is generally accepted as being effective in promoting healing—gentle, mechanical pressure. Most ulcers of the leg are related to disturbances of the venous circulation, such as those seen associated with varicosities and deep thrombophlebitis. In regard to the etiology of varicose ulcers, the theory of passive congestion is discarded. It is thought that the actual recurrent phlebitis in the periphlebitis produces changes in which in turn predispose to ulcer formation. In ulcers resulting from deep thrombophlebitis it is thought that inflammation in the smaller superficial veins leads to ulcer formation. All such ulcers are essentially infectious in origin and develop on the basis of periphlebitic infiltration and cicatrization.

For treatment, mechanical pressure is the mainstay and the authors prefer the Unna's paste boot to other methods such as elastic bandages and elastic adhesive. The boot is applied in the following manner. After melting, the paste is applied with a brush to the ulcer as well as to the normal skin from the base of the toes to the knee. A layer of gauze bandage is then wrapped about the leg. Avoid twists and creases by cutting each successive turn of the bandage. Another layer of paste is applied over the bandage and this is covered with a second thickness of bandage. Adhesive strips are applied in a spiral fashion to keep the bandage from slipping. The boots are changed once a week at first, but later may be left on two or three weeks. After healing has taken place, Unna's paste or an elastic bandage is worn for several weeks longer.

Eradication of existing varicosities is important from a standpoint of prophylaxis against formation of new ulcers rather than for healing of the ones already present. Active obliteration is deferred until the inflammation has subsided and healing is in progress. Ligation at the saphenophe-moral junction followed by retrograde injection of the saphmous with a sclerosing fluid.

Other measures used in the treatment of ulcers include the application of two per cent mercurochrome ointment to the lesion if the exudate is profuse to inhibit the growth of organisms. Occasionally a patient will be sensitive to his exudate and develop a marked eczema under the boot, accompanied by constitutional symptoms. In such cases moist compresses of aluminum subacetate are applied until the eczema is healed and the exudate has ceased. Coincidental general diseases, including malnutrition, vitamin deficiency, and particu-

larly arteriosclerosis treatment. Skin grafting is rarely necessary with this form of treatment.

UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.

By G. A. WILLIAMSON, JR., M.D.

Medical Building, Knoxville

The Occurrence of Urologic Complications in Humans Following Sulfapyridine Therapy. William Antopol. *Journal of Urology*, April, 1940.

Hematuria in patients with pneumonia who do not receive sulfapyridine is rare, occurring in only about four per cent. In a series of forty pneumococcus pneumonia cases who received sulfapyridine, forty per cent showed a transient microscopic hematuria varying from two to 100 plus red blood corpuscles per high power field. The hematuria began from one to three days after the sulfapyridine therapy and disappeared shortly after the drug was discontinued. This is not surprising since urinary concretions were frequently found in rats, rabbits, and monkeys after the administration of sulfapyridine.

X-ray examination of two cases with considerable hematuria did not demonstrate the urolith. This is in accord with animal experiments in which the concretions were radiotransparent. The calculi

are soft and friable and can be either redissolved or washed out.

Only two cases complained of urinary symptoms during the course of treatment and there were no residual symptoms in any of the cases. In one instance the patient complained of colicky pain which radiated from the lumbar region to the groin associated with gross hematuria. X-ray did not reveal a calculus. After four days the symptoms and hematuria cleared up.

Three cases came to autopsy. No concretions were demonstrable in the urinary tract. However, the kidneys showed a localized non-necrotizing hemorrhagic papillitis and pyelitis in the adjacent areas with tubular degeneration and evidence of change in the glomeruli. These changes corresponded with those found in the experimental animals.

Comparison was made in the autopsies performed upon the cases who did not receive sulfapyridine. Although some of these degenerative changes were found in the kidneys, in no case were they as severe as in those who had received the sulfapyridine therapy.

In some of the experimental animals there were small calculi found associated with the degenerative changes. The fact that no calculi were demonstrated in the patients did not rule out their presence, because all of these patients had fluids forced before death and it is likely that the calculi were dissolved.

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THE SMALL TOWN CLINIC HOSPITAL—ITS PLACE IN THE COMMUNITY*

W. G. RHEA, M.D., Paris

TEN TO FIFTEEN years ago this subject would have been of little interest because there were only a few such institutions. Most of the patients needing hospital care were sent to the large centers. The popular general surgeons in the cities were enjoying a large preferred practice. Few small towns had capable surgeons or hospitals meeting the minimum requirements. This picture has been gradually changing. A most extensive investigation three years ago by Rankin showed that of the 3,073 counties in the United States 166 had a population of over 100 000, and that 1,607 of the remaining counties had a general hospital, leaving 1,300 counties with no general hospital. These figures indicate that, although many of these institutions have been built, there are still a large number of communities without such a medical center.

The purpose of this paper is to present to you the small town clinic hospital and to discuss its place in the community, its organization and minimum safe requirements, to briefly consider its probable future, and to give some thought toward the problem of adequate medical care. As an illustration of the volume and the type of service rendered by a typical rural hos-

pital, statistics relating to work done in our clinic hospital during the past three years are presented.

That there is an actual need in this country today for such institutions can hardly be questioned. They fill a most important place in the community life. The great majority of people who live in small towns and on the farms prefer to be treated by physicians they know. It is more economical to be near home. The patient with appendicitis is less apt to rely on time and the ice bag for relief. The accident case is handled with greater ease and more efficiency than in the doctor's office. The complications of a serious illness or of childbirth, as well as the routine labor case, are better treated in the small hospital.

As an institution, the small town clinic hospital stands in intimate relationship with the community it serves. Blood transfusions, lights in the operating room at night, accident cases—all cause widespread interest and wonder. Successes are of somewhat more than ordinary note, but an unfortunate death is the subject of much gossip. The hospital has its critical enemies as well as its admiring friends. The only criticism which is just, and truly to be feared, is that which comes as a result of inadequate service, poor food, dishonesty, a lack of tactfulness and consideration, and, above all, a cold and indifferent attitude

*Read before the Tennessee State Medical Association, Jackson, April 11, 12, 13, 1939.

which registers no true personal interest for the patient. These faults are harmful to any institution, but to the small town clinic hospital they spell doom.

The community need for a hospital and the services it renders can best be understood by observing an average day's work in any average rural hospital.

Fortunately, much has been done under the heading of organization of the small town hospitals. There is a rather concerted effort at the present time for small hospitals to join their state association and, in turn, become a member of the American Hospital Association, which has established the following essentials of an accredited hospital:

That the hospital shall be staffed by physicians of good repute who are graduates of recognized medical colleges and licensed to practice medicine in the state in which they reside;

That the hospital shall have adequate facilities for the diagnosis and treatment of the patients who are brought to it for hospitalization;

That a careful and accurate medical record of each case admitted for care to the hospitals shall be kept and filed;

That the hospital shall be provided with the necessary laboratory facilities to assist in the diagnosis of disease;

That it shall be operated in an ethical manner and conducted along the accepted lines of hospital work.

No institution should exist for a very long period of time without meeting those conditions as well as certain other minimum requirements. Every effort should be made to reduce fire hazards. The reception room, especially where private office patients are seen in the hospital should be roomy and comfortable. The office for administration must be neat and businesslike. The laboratory and X-ray departments may be small, but equipped for efficiency. Space for doctors' offices and treatment rooms will be well worth while, even in publicly-owned small hospitals. The theme throughout the entire building should be simplicity, efficiency, and sound economy. There is no place in this type of institution for more

than a very modest amount of marble, tile, and terrazo.

It has proved advantageous for a group of physicians to have their offices in the hospital. With this setup it is essential to have a telephone operator in the reception room, a record clerk, and a business manager who is also the bookkeeper. It is necessary to have a trained technician. It is important that the nurse who assists the doctor in his office and treatment rooms be exceptionally qualified. This personnel and equipment is used to a greater capacity when private office practice is maintained in the hospital. Dr. Hertzler of Kansas, affectionately known as America's "Horse and Buggy Doctor," has said that the supervisor of a small hospital should be in every way a "handy man." She should have poise, tact, and common sense in addition to her excellent scientific training. He also said that such an institution does not need all the modern facilities, but must have the right doctor; one who not only knows how to use such equipment, but how to ignore it; one who not only knows how to treat the disease, but how to treat the patient.

Dr. B. F. Eckles, writing in the *Virginia Medical Monthly* several years ago, made the following apt and forceful statement: "A small hospital should never be a proving ground and an experimental laboratory for the inexperienced or ambitious surgeon. The physician with his grave and acute sense of responsibility and accountability to his patients, especially in a small hospital, must guard against any tendency toward exploitation. He must have an accurate knowledge of his as well as his hospital's limitations and must not be lured beyond them. The phrase that we will 'practice our profession with restraint' certainly applies in this circumstance. Testing the merits of new and different therapeutic procedures are best left to larger institutions. We should follow Pope's old and wise adage that we 'be not the first by whom the new is tried nor yet the last to lay the old aside.'"

Statistics on work done in our clinic hospital during the past three years are presented here because we believe it is sit-

uated in a typical rural community and renders a service representative of the average small town hospital. The city of Paris has a population of approximately 8,000, while Henry County has a population of about 25,000. The community is essentially agricultural. There are two privately-owned clinic hospitals at Paris, in Henry County, with a total capacity of about forty-five beds. There are three physicians with offices in our clinic. A very small percentage of our hospital patients are referred by other physicians.

Table I shows work done during the three years—1936, 1937, and 1938.

TABLE I

	Admissions	Major Operations	Minor Operations	Medical Cases	Obstetrical Cases
1936 through 1938	1323	354	325	615	92
Mortality Rate	3.2%	3.7%	0	4.8%	0

Table II shows work done in our offices during the same period.

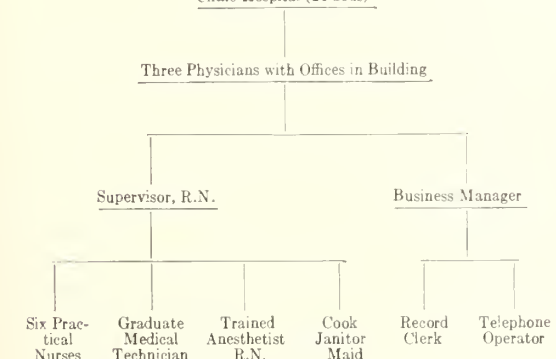
TABLE II

	Average Number Daily Patients	Average Number Daily Laboratory Tests	Average Number Daily X-rays
1936 through 1938	50.5	9.4	1.3

Table III shows hospital setup in diagrammatic form.

TABLE III

Clinic Hospital (24 beds)



The two hospitals in Paris receive no remuneration from the city or county for nonpaying patients. An institution operating under these circumstances must exercise sound economy in order to render good service and survive. It is difficult for many

of the patients to realize that when they pay their hospital bill they are not paying for professional service. This is especially true in medical cases. In order to manage successfully, one must be a surgeon, a country doctor, and, at the same time, a number one businessman. On the other hand, let me emphasize the fact that all such hospitals are not properly manned and equipped; that physicians are attempting to do major surgery who have not been well trained over a sufficient period of time; and that such a doctor is a menace to his community in direct proportion to his popularity.

One hears and reads a great deal about adequate medical care for all the people. At the same time, there are still a number of towns and counties which do not attach enough importance to their general health and well-being to do anything about it. They are many times more anxious to secure TVA power or better roads, or to protect their homes from fire and theft. These things are important; but are they more important than meeting the vital need of a well-equipped clinic hospital which would bring to them better qualified physicians? A greater number of the more recent well-trained graduates in medicine would offer their services rather than congregate in the larger centers where the percentage of doctors is higher. These men would practice better and more modern medicine and surgery using necessary and sufficient facilities, while, at the same time, they would learn the important art of being a family physician. One must come to know that it is a rare person who does not need the service of a hospital during the course of a lifetime.

Little that we have discussed so far can be disputed. However, any remarks about the probable future of the small town hospital may immediately arouse discussion. Dr. Morris Fishbein, speaking last month before the Southeastern Surgical Congress in Atlanta, pointed out that the finding of 1,300 counties without general hospitals is not as bad as it seems. First, because the population in many of the areas is too small per square mile; and second, because in other communities the majority of the pop-

ulation is within twenty to twenty-five miles of a hospital. He also pointed out that the efforts of the federal government thus far to secure adequate medical care for the people is not taking into consideration the excellent job being done by the medical profession at the present time. Apparently the government does not realize that many of the people do not want this so-called adequate medical care. They do not choose to be treated by the medical profession. They adhere to the tenets of fads and quackery in healing.

An example which confirms this statement occurred in our home town and county during 1936 and 1937. Hundreds of people visited an "Indian doctor," paying him thousands of dollars. They would have done the same thing had there existed a hospital offering free service. Many of them are quite superstitious and ignorant about their bodily ills.

Doctor Fishbein continued to say that the solution to successful adequate medical care would not come through political channels with the government spending millions of dollars annually for this purpose, but that it should develop from the study of the actual needs of each community through the efforts of the civic leaders working with the medical profession and the public health authorities. New facilities could be obtained or those present could be enlarged to meet the demand. In order to carry this out, city, county, and state governments would have to assume their just responsibility in the hospital care of the non-paying group.

Dr. T. H. Agnew, secretary of the Department of Hospital Service, Canadian Medical Association, is proud of their network of small hospitals. With the exception of a very few they are public rather than proprietary. Doctors operate their own hospitals only until they are taken over by community of voluntary control. The provinces and municipalities pay approved hospitals a statutory rate for nonpaying patients. Practically all of the government health work is carried out through the hospitals. This makes it possible for the

generous policy of the "open door" to actually exist.

It would seem that this close cooperation between all health departments of the city, county, state, and federal governments would not only produce added efficiency, but would more completely utilize all existing medical personnel and facilities. The medical profession would then be a vital part in the drive for adequate medical care rather than be antagonized by the threat that with federal and state monies and employees the job will be done.

The following questions have been very wisely asked by H. G. Andrews, a newspaper editor in Johnstown, Pennsylvania:

"Why should not the modern hospital be the seat and center of all approved public health activities?"

"If the state establishes clinics anywhere, why shouldn't they be at hospitals?"

"Why shouldn't every visiting nurse, whether she be employed by city, county, or state, work out of a hospital?"

"Why shouldn't the hospital be the clearinghouse for all health activities and function aggressively and militantly as an energizing health center?"

"Why shouldn't all roads traveled by those who need health service lead to the hospital door?"

"Somewhere, sometime, there must be an end to the rivalry between competing health agencies which duplicate service and offer the politician an ever-expanding field in which to display his talents."

There are many small community hospitals, as well as larger ones, ready and capable of serving in this capacity. In fact, their very existence in the future may depend to a large extent upon their public health associations and service. It would be well for the medical profession with its American Medical Association to bend every effort toward such cooperation in order that adequate medical and surgical care could be best carried out for all concerned.

In conclusion, we will summarize by saying that we have discussed the small town clinic hospital, its place in the community, its organization and minimum requirements, and have presented statistics illus-

trating the type of work done in an average rural hospital. We have also discussed briefly the question of adequate medical care with a word about the small hospital's probable future.

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DISCUSSION

DR. J. W. OURSLER (Humboldt): Mr. President and Gentlemen: I think Doctor Rhea is to be congratulated on his interesting paper, and I also think he is to be congratulated on the splendid work that he and his staff are doing in his hospital in Paris. It is indeed a rare person who, in the course of a lifetime, does not need the service of a hospital.

A few years ago a doctor friend of mine in Missouri was interested in raising funds for a small hospital in his own town, and he went up to St. Louis to see the head of a chain department and asked him for a contribution. This man said: "Why should I contribute to a hospital in your town? I don't live there. I am not interested."

This doctor said: "Well, you have quite a large store in our town. You have a number of employees there and you visit our town quite often, don't you?"

He said: "Yes."

The doctor said: "Well, suppose that sometime on a visit out there you should have a serious automobile wreck. You would want the very best attention given you, wouldn't you? Suppose one of your employees out there was taken seriously ill or seriously injured. You would want him to have the best of service without having to haul him a hundred miles to St. Louis, wouldn't you?"

"Well," he said, "I hadn't thought of it from that angle," and he wrote him a check for a thousand dollars. He not only contributed to that hospital, but he looked into the hospitals in every town that had a store, and to those that were in need he contributed.

It is true that a few years ago some of the small hospitals were not run properly and some of the men were not qualified to do surgery who were attempting it, but it is different today. In my opinion, the small hospitals have come to stay. The young men coming out today are well trained; they are ambitious; the larger towns are overcrowded; and the result is that they are moving to the small towns. These men are not going to be satisfied to set up an office over a drugstore and spend the rest of their lives making two-dollar calls. Therefore, they are going to set up their own clinic hospitals; they are going to make better doctors; and they are certainly going to give their patients better service.

I believe that the average doctor running a small hospital realizes the limitations, and when a surgeon specialist is needed one is called in. That has certainly been our policy, and I believe that the record in our little hospital will compare favorably with those in any of the larger hospitals.

I thank you.

DR. JERE LAWRENCE CROOK (Jackson): Mr. Chairman and Gentlemen of the Association: I likewise congratulate the essayist on his fine work in his little hospital and on the manner in which he presented the paper. It was extremely interesting and, having been in the business for some time and having graduated from it, I believe I can look at it from an objective standpoint as well as from an introspective standpoint.

Thirty-one years ago my father and I founded the little hospital in the next block with ten beds. Five years later we added fifteen more beds, and for many years we ran the little twenty-five-bed hospital. Like my friend from Paris, we suffered from a lack of interest on the part of the "powers that be" in the county court and city government, and during all the time that little hospital operated as a strictly private hospital, we never received one dime from the city of Jackson or the county of Madison. We would take patients in off the street, mangled, torn, bleeding, dying, and do our best for them, and by the mere fact of having saved

the lives temporarily in the operating room, we were obligated from the dictates of humanity to pay out our own money to feed and care for them until they got well. We constantly paid for the opportunity of working for nothing.

That is the experience of every owner of a small hospital that does not get municipal or county aid. It is all right; it is all in the past. The water has gone over the dam. But, as a matter of fact, the small private hospitals of America have been treated shamefully by the taxpayers of the towns and cities in which they live. Due appreciation never has been shown to the men who have felt that they could not consistently measure up to the ideals of the Hippocratic oath and the great traditions and obligations of the most unselfish profession on earth unless they provided adequate facilities to take care of these people, and proper environment in which to operate on them.

So, because of the fact that the city of Paris and the city of Jackson have evaded their obligations throughout the years and have placed those burdens on private shoulders, that is why many owners of small hospitals have suffered. The same thing which my father and I endured years ago, and which I bore after his death nineteen years ago, the two hospitals of Jackson are suffer-

ing now—the two private hospitals of Jackson—one of which is the Fitz-White Clinic, which has taken over the west wing of the original Crook Sanatorium, and the other is Doctor Webb's hospital. I am in a position to speak objectively of these two, because I am not connected with either one, but have the privilege of operating in both, and I am on the staff of both.

Doctor Webb expected to be here to discuss this paper, but he was called away, and I am presenting his figures for last year. There were 446 major operations performed in the Webb-Williamson Hospital, consecutively, and there were two deaths. Within that 446 major operations there occurred seventy-three clean appendix operations without a death; there were fifty-two ruptured appendiceal cases operated on with two deaths—fifty saved. In the two deaths, the appendix was not removed in either case, the condition was so desperate with general peritonitis that simple drainage was done, and they were the only two that died.

There were ten gall-bladder cases, nine Caesarean sections, three ruptured duodenal ulcers.

Gentlemen, I submit that to the Medical Society of Tennessee and to the medical profession of America as being an outstanding accomplishment from the standpoint of mortality.

SOME CLINICAL MANIFESTATIONS RESULTING FROM ENDAMEBA HISTOLYTICA INFECTIONS

EDWARD L. TURNER, M.D., AND WILLIAM A. BECK, M.D.,* Nashville

EVER SINCE the 1933 outbreak of amebic dysentery in Chicago, physicians in the United States have been more clinically conscious of this disease. The widespread publicity associated with the Chicago outbreak helped to emphasize the fact that amebiasis is not solely a tropical disease as many physicians had formerly been inclined to believe. Unfortunately, once the infection is established in the human body there are a number of ways in which it may manifest itself clinically. Most physicians correlate the idea of dysentery with the organisms known as *endameba histolytica*, while dysentery is only one of a large group of clinical pictures that may be produced.

In order to bring some of these clinical pictures to your attention, we shall summarize several cases that were recently presented at one of the senior medical clinics at Meharry Medical College. Some of these cases were from Hubbard Hospital patients and the others from illustrative cases encountered at the American University of Beirut in Syria. In this review we are making no attempt to outline the treatment of amebic infections, but are concerned solely with the symptomatology presented by the patients in an attempt to demonstrate the wide variety of clinical pictures that must make us include amebic dysentery or some manifestations of amebiasis in our differential diagnostic survey.

Case No. 1.—G. H. C., female, age twenty-five, entered A. U. B. Hospital, December 14, 1934. Occupation, housewife. Chief complaint, loose bowels for the past ten days. According to her story, she had been delivered of her last child at home ten days ago. The day of her confinement she began to have frequent bowel movements full of mucus. Mild lower abdominal pain was present, and there were some blood streaks in the stool. She had experienced some diz-

ziness and palpitation. Bowel movements increased to twelve to fifteen daily. She had felt chilly and knew she had also been having fever at times during the past several days. There was no history of any previous gastrointestinal disorder. Past medical history was negative except for chronic malaria about a year previously. Social and family histories were noninformative.

Physical examination revealed a young woman, twenty-four years of age, lying comfortably in bed. The skin was warm and showed signs of considerable dehydration. Pulse, 120; temperature, 101 degrees Fahrenheit; respiration, twenty-two; blood pressure, 100/80. Both eyes were trachomatous, lips dry, tongue red and dry. Neck and chest essentially normal, cardiac area normal, sounds of good quality, soft systolic murmur heard over precordium. The abdomen showed an extensive scar from a childhood burn on the left side. No abdominal rigidity. Tenderness over the hypogastric region and lower left quadrant. Liver three fingers palpable and firm; spleen two fingers palpable and moderately firm. Nail beds pale. Laboratory examination showed 2,150,000 red blood corpuscles, fifty per cent hemoglobin; 6,000 white blood corpuscles; polymorphonuclears, seventy-four per cent; lymphocytes, twenty-four per cent; mononuclears, two per cent. Wassermann and Kahn negative. Stool examination showed presence of *endameba histolytica* cysts. Proctoscope entered easily to thirty centimeters. Rectal and lower sigmoid mucosa red and friable. Mucosa bled easily. Small ulcerations were observed over the lower sigmoid mucosa. Urine findings were negative except for a trace of albumin.

On December 18 the patient was placed on emetine therapy consisting of an initial dosage of .03 gram (one-half grain) emetine hydrochloride subcutaneously on the first day followed by .06 gram (one grain) daily for ten days.

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Subsequently there was a rapid improvement. By December 21 there were two daily bowel movements, temperature was normal, and recovery was uneventful. She was discharged in good condition on December 28. Stool examinations, December 26, 27, and 28, were negative for vegetative or cyst forms of *endameba histolytica*.

This case illustrates the moderately acute form of amebic dysentery that is frequently seen. While most amebic dysentery cases do not have much fever, or may even be totally afebrile, this case ran a definite temperature during the first twelve days of her illness.

Case No. 2.—E. B., female, age twenty-four, entered Hubbard Hospital, March 9, 1938. Occupation, teacher. Chief complaint, chronic constipation for the past eight months. The patient stated that she had suffered from attacks of constipation for the past six years. About eight months ago she developed constipation with colicky abdominal pains. She also began to be troubled by "itching piles" and had recourse to various types of cathartics. She had been troubled by extreme pains on stool at times. No blood had been observed in the stools, but she had noticed that the stools were thinner than they used to be.

She definitely recalled that her first attacks of constipation followed an attack of diarrhea during the summer six years ago. She was instructor in a Girl Scout camp at that time and remembered the great inconvenience caused by the attack of diarrhea. For some months after this attack cleared up, she was troubled by periods of constipation, alternating with looseness of the bowels. The latter difficulty then disappeared and constipation supervened. Past medical, family, and social history essentially negative.

Physical examination revealed a well-built and well-nourished young negro female resting comfortably in bed. She was moderately obese. Temperature, 98.6; respiration, twenty; pulse, eighty; blood pressure, 108/60. Head, eyes, ears, nose, and mouth normal. The thyroid gland was slightly enlarged. Chest and lungs normal, cardiac area normal, sounds of good quality,

soft apical systolic murmur not transmitted. The abdomen was symmetrical and there was no rigidity. There was tenderness over the caecum, hepatic flexure, and sigmoid colon. In the left lower quadrant the sigmoid was palpable as a firm, cordlike body. Extremities and genitalia were normal.

An X-ray examination of the colonic tract by means of barium enema demonstrated large quantities of mucus and gas at the hepatic flexure and also in the descending colon. There was evidence of spasticity in the transverse colon near the hepatic flexure. X-ray diagnosis was spastic colitis associated with excessive mucous secretion.

Laboratory findings showed eighty per cent hemoglobin, 3,700,000 red blood corpuscles, 7,500 white blood corpuscles, seventy-two per cent polymorphonuclears, twenty-seven per cent lymphocytes, one per cent basophiles. Wassermann, Hinton, and Eagle negative. Basal metabolism, minus five per cent. Urine essentially negative and stools showed *endameba histolytica* cysts. Vegetative forms were not observed.

The diagnosis was spastic colitis secondary to intestinal amebiasis. The patient was placed on emetine therapy and low residue diet. Rapid improvement followed, and the stools have been repeatedly negative for *endameba histolytica*.

This case illustrates an end result of amebic infection that is frequently overlooked. Chronic constipation of the spastic type or alternating constipation and diarrhea should always be a warning that chronic amebiasis must be ruled out. Some very happy and satisfied patients will result from the efforts of the physician who keeps this problem in mind.

Case No. 3.—F. A. B., female, age sixty, admitted to A. U. B. Hospital, December 30, 1933. Occupation, housewife. Chief complaint, fever, headache, and pain over the right upper abdominal quadrant for the past two months. Two months before admission the patient began to feel feverish, tongue became dry, and she had an almost constant headache. Just before she noticed her fever, she experienced pain over the right upper quadrant and the right loin. Her physician diagnosed her condition as

typhoid fever, placed her on a low residue diet and bed rest. The fever continued and the pain in the right upper quadrant increased. Sometimes the pain radiated to the right side of the back (loin). The patient had not vomited or coughed during her illness. Recently she had been somewhat short of breath. Past medical history included an attack of diarrhea with mucus and blood several months ago. Her family and social history were uninformative. Pulse, 110; temperature, 102 degrees Fahrenheit; respiration, thirty; blood pressure 120 90.

Physical examination revealed an elderly female patient obviously very ill. She was weak, apathetic, and answered questions indifferently. The conjunctivae were slightly icteric. Nose, mouth, and ears negative. The chest showed limited respiratory excursions with rapid, shallow movements. The right lung base was dull and no diaphragmatic excursion could be made out by percussion. There were few moist rales over the right base. The chest was tender on percussion over the liver area with the tenderness most pronounced in the anterior axillary line. Cardiac area normal, rate accelerated (110), sounds of good quality. The abdomen was lax and flabby. Spleen not palpable. In the right side of the abdomen there was a palpable mass extending about four fingers below the costal margin. It was smooth in outline and seemed to be continuous with the liver. It filled the right upper quadrant and extended into the epigastrium. No glands palpable. Extremities and pelvis normal. Laboratory examination revealed sixty per cent hemoglobin, 2,900,000 red blood corpuscles, 12,000 white blood corpuscles, seventy-nine per cent polymorphonuclears, twenty per cent lymphocytes, and one per cent eosinophil. Urine showed traces of sugar and albumin. Blood sugar was 181 milligrams to 100 cubic centimeters. Wassermann and Kahn negative. Stools contained vegetative forms of *endameba histolytica*, *chilomastix trophozoites*, and *trichuris ova*. X-ray examination revealed that the right side of the diaphragm was unduly high and its movements restricted. The heart was

displaced to the left. The lower border of the liver descended far below the costal margin. X-ray diagnosis marked enlargement of the liver, probably due to an abscess.

The most tender location over the liver area was determined and liver puncture made. On the first aspiration, December 9, 800 cubic centimeters of thick chocolate-colored pus was obtained. The liver area changed considerably in size during the removal of this pus, and the patient felt marked relief from her pain. The patient had been placed on emetine hydrochloride therapy prior to her liver aspiration, and this was continued for twelve days. The liver pus contained Charcot-Leyden crystals and vegetative forms of *endameba histolytica*. The patient was given yatren .5 gram three times a day by mouth and a daily rectal retention enema of 100 cubic centimeters of two per cent yatren solution as part of the treatment. This patient made an uneventful recovery and was followed for three years, during which period there was no return of her symptoms.

This case illustrates hepatic amebiasis with the abscess formation that sometimes occurs. Frequently patients will have amebic hepatitis that does not develop into the abscess stage if adequately treated with antiamebic measures.

Case No. 4.—M. F. U., female, age fifty-five, admitted to Hubbard Hospital, February 17, 1937. Occupation, housewife. Chief complaint was rectal trouble. Her present difficulties started three weeks ago, when she had severe lower abdominal pains accompanying her bowel movement. She had noticed blood with her bowel movements and also observed that her stools were thin and ribbonlike. Constipation had troubled her frequently for many years, and she had become a chronic addict of various cathartics. Her past medical history included an operation for hemorrhoids twenty years previously; a few years later a fibroid was removed and a repair of a rectovaginal fistula eight years ago. The social history was noninformative. Her father had died of old age and her mother had died at sixty-two years of age from a

"tumor." Temperature, 98.4 degrees Fahrenheit; pulse, seventy-six; respiration, eighteen.

Physical examination revealed a middle-aged, well-developed negro female who did not seem to be acutely ill. Head, ears, and nose negative. Eyes demonstrated arcus senilis; mouth showed surgical absence of all teeth with well-fitting artificial plates. Neck, chest, lungs, and heart were essentially normal. The abdomen was flaccid and symmetrical. There was a healed midline scar between the symphysis and the umbilicus. In the left lower quadrant there was a firm, irregular mass in the sigmoid region. This mass was fixed. Laboratory examination revealed 4,100,000 red blood corpuscles, seventy-one per cent hemoglobin, 5,400 white blood corpuscles, seventy-two per cent polymorphonuclears, nine per cent mononuclears, and nineteen per cent lymphocytes. Urine was essentially negative. Wassermann, Hinton, and Eagle negative. Proctoscopic examination was made and the instrument easily inserted to twenty-five centimeters. The proctoscope was not long enough to reach the sigmoid area. No bleeding points were observed. A barium enema was requested to try and rule out a tumor of the sigmoid. The X-ray examination of the colonic tract by means of a barium enema demonstrated an irregular, ragged filling defect in the region of the sigmoid flexure of the colon. This filling defect measured approximately three and one-half inches in length. It was felt that this was most probably an annular malignancy of the sigmoid.

Surgical and gynecological consultations were held and a laparotomy was advised. The patient, however, was obstinate in her refusal to undergo another operation. She stated that if she had a cancer, it would probably not be possible to do much for her anyway, and that she would not consider any surgical interference. In view of our previous experiences with amebic infiltration of the colon simulating the symptoms and findings of carcinoma, careful stool examinations were made. *Endameba histolytica* cysts were found. The patient was placed on a course of emetine therapy on

December 21. On December 24 there was a noticeable decrease in the size of the mass in the sigmoid region. The patient remained in bed and was given the rest of her course of therapy by her physician (W. A. B.). The course of emetine therapy, combined with dietary measures, caused a complete disappearance of the sigmoid mass. The patient was followed closely and was reexamined in Hubbard Hospital on March 29, 1938. A new X-ray examination of the colonic tract demonstrated a large collection of mucus and gas involving the splenic flexure of the colon and all portions of the descending colon as far as the juncture of the sigmoid and iliac colon. The iliac colon is definitely narrowed and the haustral markings are absent.

The X-ray examination, as compared with the previous study, showed a complete absence of the filling defect of the sigmoid region.

Confession is said to be good for the soul. Some years ago while in the Near East I had an elderly male enter my hospital medical service. His complaints were constipation, loss of weight, and frequent small bloody stools. He was about sixty years of age and was in a pathetic condition. Physical examination revealed marked emaciation, moderate anemia, and a palpable, nodular mass in the left lower quadrant over the sigmoid area. Proctoscopic examination revealed the presence of a fragile bleeding mass in the lower sigmoid area. Rectal walls were infected and fragile. X-ray examination demonstrated a filling defect of the sigmoid colon almost occluding the lumen. A surgical consultation was requested and the patient transferred for biopsy to be followed by colostomy to relieve the obstruction. The impression of malignancy had been so strong that the transfer was made prior to the completion of the laboratory studies on the stools. These laboratory reports came back three or four hours after the transfer with the information that there was a heavy infection with large numbers of *endameba histolytica* cysts and vegetative forms present in the stool.

In view of the fact that amebic infections of the bowel are frequently associated with infiltrations of considerable extent and marked friability of the intestinal wall rendering it difficult to operate, it was felt necessary to try to rid the intestine of these organisms with preoperative emetine treatment. This was done and, to my astonishment, within a week the sigmoid mass began to undergo great diminution, constipation became less marked, and the patient began to show clinical improvement. The change was so great that it was decided to use the combined yatren-emetine therapeutic procedure. Within three weeks the condition had entirely cleared with no *endameba histolytica* remaining in the stools.

These last two cases have illustrated a clinical picture of amebic infection that is seen occasionally and is accompanied by marked infiltration of the large intestinal wall that can closely simulate carcinoma of the large intestine.

SUMMARY

In presenting these case histories we have tried to illustrate some of the clinical pictures that may be presented by patients suffering from infections with *endameba histolytica*. Most physicians continue to associate amebic infection solely with dysentery. It should be remembered that a variety of clinical pictures can be produced, of which the dysentery syndrome is only

one. Patients with histories of dysentery in the past with symptoms of alternating diarrhea and constipation should be suspected of possible amebiasis. Chronic spastic colitis with constipation may be an end result of infection with this organism. Infiltration of the intestinal wall with marked thickening is seen not infrequently. Cases with this manifestation, especially when seen in middle-aged and elderly individuals, may almost perfectly mimic the classical picture of carcinoma of the large intestine. Careful stool examinations are indicated in these cases and may be the means of avoiding an otherwise useless operative procedure. Hepatitis due to amebic infection must be kept in mind as a possibility in some of our cases of jaundice in this vicinity. Amebic abscess of the liver simulates the picture of liver abscess from various etiological factors. However, the method of therapeutic approach of amebic abscess of the liver is quite different from that of other types of liver abscess and this is worthy of consideration.

No attempt has been made to exhaustively discuss amebiasis. We have tried to illustrate from actual proven instances the wide variety of clinical symptomatology this organism is capable of producing, with the hope that these cases will help to stimulate more careful search for and elimination of *endameba histolytica* as the causative agent underlying symptomatology similar to that described.

THE MEDICAL ASPECTS OF THE MENOPAUSE*

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MENOPAUSE, change of life, and the climacteric have been interchangeably used by our ancestors in medicine from the time of Hippocrates to the present generation. It comes on at that time of a woman's life that is characterized by many functional and bizarre symptoms, due to an endocrine imbalance which appears before or with the first irregularity or cessation of menstruation and continues for a number of years thereafter. To this definition I still adhere, although there is a tendency or fad among the present generation to coin new words and change the definition of the older terms. This applies to the menopause, which some define as the last menstruation, and the climacteric as denoting the symptoms that appear before or after the last period.

In this paper I will refrain from reference to the surgical aspects of the menopause. I must emphasize in the beginning, however, that any abnormal discharge or bleeding at this time of life demands a pelvic examination and, if necessary, a biopsy should be made.

A very interesting study of the menopause was made by a group of English physicians in 1933¹ and the result of their study was published in the *Lancet*. It was an investigation of 1,000 women in normal health and in all conditions of life. It showed that 15.8 per cent of the 1,000 women investigated were free of any symptoms during this period; a further study of those who had no symptoms showed that 13.8 per cent of the married and 20.4 per cent of the single women were free of symptoms. This shows quite a difference between the married and single women. It is an observation that I have never noted or seen in the literature.

Naturally the most common symptom found was flushes. It was observed in 62.3

per cent of the total studied, with 64.8 per cent frequency among married and 59.1 per cent among the single women. Even in this group flushes were 5.7 per cent more common among the married than among the single group.

Headache was found as a symptom in 44.6 per cent of the total, with 45.9 per cent frequency among married, and 41.7 per cent among the single women. Giddiness occurred in 39.7 per cent of the total, with 42.3 per cent in the married group, and 34.3 per cent in the single group.

Obesity was observed in 34.2 per cent of the total women, with 39.4 per cent frequency in the married, and only 22.7 per cent in the single group.

Nervous instability was observed in 30.9 per cent of the total, with 30.4 per cent frequency among the married and thirty-two per cent frequency among the single women. It is to be noted that this is the first one of the most common symptoms of the menopause, in which single women had a higher percentage of frequency than married women.

Rheumatic pains were found in 23.7 per cent of the total, 24.9 per cent of the married women showing these symptoms, and twenty-one per cent of the single women.

Of the less frequent symptoms, pain in the breast was found in 6.3 per cent of the total, with a difference of 1.7 per cent more frequency in the married than in the single groups. Changes in the thyroid showed only a two per cent occurrence in the total number investigated, with a frequency of a little less than one per cent in the single over the married women.

Approximately ten per cent of the women examined were incapacitated for various periods of time. On the other hand, ninety per cent stated that they carried out their daily routine without interruption.

Of the total, 64.7 per cent had their last period between forty-five and fifty-five years of age. In this group it was proved that there was no relationship exhibited in the data between the beginning of men-

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struation and the end of menstruation. Statistical analysis showed that child-bearing exerted no influence on the age of menopause. I should mention, in passing, that hemorrhage, which is considered one of the surgical symptoms of menopause, was found in approximately twenty-one per cent of the women under observation. Women who have had a normal menstrual life have the percentage in their favor for a normal menopause.

The report brings out an important point that dysmenorrhea is not as common among girls of the present time as it was in their predecessors, due to active outdoor life led by the girls of the present generation. Previous health was of no importance in influencing the onset of severity of menopausal symptoms.

In summary of this report—the majority of the common symptoms of the menopause were more frequent in the married than in the unmarried group, the exception being nervous instability and change in thyroid.

These statistics correspond, for the most part, with those found among the women of the United States. It is noteworthy that the British did not mention fatigue, depression, sweats, flatulence, palpitation, high blood pressure, and an exaggeration of symptoms (mental and physical) that existed before this time of life. Most American writers are of the opinion that an early menarche means a late menopause. It has also been handed down in American literature that city girls menstruate earlier than country girls, and that brunettes menstruate earlier than blondes, all of which I am inclined to believe is a matter of fiction, and we have accepted them without investigation or giving due thought to the subject. I have observed in many cases symptoms of the menopause that appeared several years before irregularity of the periods, and I have also noticed symptoms of the menopause that have come on four to six years after the last period. I have not seen this observation in any textbook, but it is one you can verify on your patients by giving them the therapeutic test which will be mentioned under treatment.

Hypertension is not an uncommon symp-

tom of the menopause. Fortunately, in many patients it is transient and is most marked in those cases in whom hot flushes are of frequent occurrence during the twenty-four hours. In a small number of patients, the rise in blood pressure is persistent and progressive. It is in this small number of, but seriously afflicted, patients that the cardiologist can be of great assistance. Doctor Tinsley Harrison, cardiologist of Vanderbilt Hospital, in a personal communication expresses the opinion that—whether the hypertension is entirely coincidental, or whether the disturbed ovarian function can—in predisposed subjects—cause hypertension, is still uncertain:

“Since the sex hormones are sterols, it is conceivable that during the menopause the normal hormone may be replaced in certain patients by similar but different compounds which have a hypertensive effect. However, it has not yet been demonstrated that such actually occurs. Therapy, with estrogenic substances, does not usually cause a decline in blood pressure, except in so far as it alleviates symptoms and makes the patient less anxious.”

Involutional melancholia may come up at this time of life and can be greatly benefited or relieved by the proper treatment. Dr. Frank Luton, psychiatrist at Vanderbilt Hospital, in a personal communication, writes as follows:

“Treatment of a patient whose mental symptoms seem to be beyond the average nervousness of the menopause should involve a search for the other factors responsible: a careful physical survey, evaluation of the severity of the mental symptoms, intensive treatment of the necessary physical needs, and psychotherapy aimed at modification of the precipitating situation. In the agitated, anxious, depressive types, suicide is a grave risk and rarely should be treated outside a mental hospital.”

Menopausal arthralgia and rheumatism are distinct clinical entities of the menopause and are greatly benefited by proper gland therapy. This statement does not mean that all arthralgias found at this time of life are menopausal in origin. Libido, in a few cases, may be accentuated at this

time of life, but the usual rule is that there is a gradual diminution. Symptoms of the menopause are more marked in post-menopausal groups and in the castrate. In the premenopausal group they are less violent and for this reason overlooked.

It is the common impression among the profession that the symptoms coming up at this time of life are due to an ovarian failure with a resultant lack of oestrin in the system. Added strength is given to this theory by the relief of symptoms, partial or complete, by the administration of oestrin. It is along these lines that endocrinology has made a great advance, and we now know that there are other factors besides ovarian failure that are conducive in bringing about the many changes in the female that are found at this time. Fluhmann² found that a close relationship existed between the presence of unduly large amounts of anterior lobe gonadotropic substances in the blood and the severity of climacteric symptoms. Fluhmann says:

"Since estrogen was demonstrable in the blood of such a large proportion of patients, it appears that the lack of this hormone is not the primary factor concerned in the production of climacteric symptoms.

"Examination of the blood of climacteric women and castrates revealed that, in general, failing or absent ovarian function is not associated with a complete disappearance of substances having estrogenic properties when injected into spayed rodents. The hormone may be detected at cyclic intervals, or it may be constant; but no relationship between climacteric symptoms and its absence or presence could be established.

"The presence of excess amounts of a gonadotropic substance, probably of anterior hypophyseal origin, was found in the blood of women of the climacteric age and after castration. It bears a close relationship to the severity of so-called climacteric symptoms. Clinical improvement of such patients was observed following treatment with sedatives, estrogens, or X-ray irradiation of the skull, while unduly large amounts of gonadotropic substances were constantly demonstrable in the blood."

Dr. Emil Novak, in discussing Doctor Fluhmann's paper, stated: "Studies of this kind indicate to my mind that imbalance of opposed hormones is more frequently the cause of clinical symptoms than is the mere excess of one hormone."

Vaginal smears from menopausal patients are characterized by few or no squamous epithelium cells and by a varying proportion of leucocytes and small, round cells with large nuclei. Menopausal patients, however, show smears of the estrus type; the atrophic type is not always found.

There is no way to avoid the menopause. It is just as certain as death if a woman lives sufficiently long. It has been brought out that it is more violent in the castrate, and even the laity realize the serious nature of hysterectomy or operations on the ovaries during the active sexual life.

Before going into the details of treatment, I should like to say that any woman during this age of life should be under the care of a physician. On the other hand, physicians should be constantly on the alert and should not carelessly attribute all symptoms to the menopause. It is one condition in the realm of medicine that time will cure, but the attending physician can lessen its severity and shorten its duration. To some women it comes as a blessing, as it does away with the perils of pregnancy, childbirth, and the responsibility of rearing children. To others, especially the emotional, fashionable woman, it appears as the end of her youth and an early approach of old age. To others, it brings the specter of malignancy—perhaps insanity. A hope and faith for better things to come must be constantly instilled into the minds of these patients. This, to my mind, is the most important part of treatment. In many of the old textbooks the term for the period following menopause is spoken of as "senility" or "old age." One will not get far with suggestive therapeutics if he tells his high-strung and emotional patients that the period of senility is in front of them. This period should be spoken of as the period of happiness and tranquility. These are accurate and truthful descriptions of that period of life. This is the happiest and best

time of a woman's life. Experience is the greatest of all teachers and has shown them the philosophy of time. Charity towards the weakness of others, a peace of understanding, and a love of their fellow man make them realize that the struggle of life is well worth living. A beauty of countenance, a dignity, and serenity make them sought after and respected by the younger generation.

Sedatives are an important therapeutic aid for menopausal patients. They must, however, be used with caution. I have seen in the last two years two cases of hallucinations and delusions due to bromide poisoning. This was proved by an examination of the blood; following the withdrawal of the bromide there was a disappearance of symptoms. I have seen one case where the symptoms were due to phenobarbital. The lesson to be learned is that sedatives must not be given constantly or indiscriminately, but only during crises that come on at this time of life.

The most dependable remedy is estrogen; it is almost a specific for the many symptoms of the menopause. As stressed by Dr. John Burch³ in a paper before the American College of Surgeons in Philadelphia in October, 1939, they have a sedative effect on the nervous system. They also correct the generalized endocrine disturbance which Fluhmann² mentions. They must be given in sufficiently large doses and continued for a sufficiently long time. They may be administered hypodermically or by mouth. A new method of administering estrogenic products by subcutaneous implantations may offer an easy way of keeping the patient under the control of estrogen.⁴ My most satisfactory results have been obtained with a synthetic product called "Stilboestrol," derived from stilbene. It has the great advantage that it can be given orally in sufficient dosage to alleviate the symptoms. So far, I have found very few patients who cannot tolerate this product, although it has been reported by a number of investigators that it produces nausea and vomiting in a varying percentage of cases. Male sex hormones may be used for the treatment of menopausal symptoms in

those cases where undesirable reactions occur following the administration of estrogen or stilboestrol. The subcutaneous implantation of this hormone has been successfully carried out in the treatment of menopausal patients.⁵

Many of these patients are deficient in thyroid secretion and are greatly benefited by the internal administration of thyroid. However, thyroid should not be given indiscriminately. The only correct and scientific way of determining its need is by a thorough endocrine work-up.

A complete physical examination of menopausal patients should be carried out at least twice a year in order to determine the presence or absence of any organic condition. This examination should include urinalysis and a complete examination of the blood. It is absolutely necessary that the patient be kept in the best possible physical condition.

In conclusion, I should like to repeat again. The attending physician can accomplish more by his demeanor of an encouraging attitude towards the patient than in any other way. Proper therapeutic measures can be instituted as the occasion demands.

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DISCUSSION

DR. JERE L. CROOK (Jackson): This paper is too valuable and has implications too important to dismiss without some discussion. Phrased in the language of our friend, who is gifted in the use of words, it has made an appeal from the standpoint of literary expression. From the psychological standpoint, it makes a very distinct appeal,

and that is the feature I would like to emphasize.

The family physician or gynecologist, who is called on to examine a woman at this particularly critical period of life, has an opportunity of making the further course of the woman's life smooth and tranquil throughout many happy years, and of rescuing her from certain inhibitions and fears which might result disastrously to her own contentment and also disturb the family relationship. It so happens that when a woman reaches the menopause, if there are children in the family, they do not understand, and perhaps the husband does not realize the significance of it. I think the personal examination and advice to the patient does not go far enough. The husband in all cases should be called by the physician and should be given a careful lecture as to his attitude toward his precious wife who has been by his side, perhaps, a quarter of a century. Everything that interferes with the proper household relationship, everything that adds to the burden of the wife, should be eliminated. The children should be told: "Your mother is passing through a stressful and

stormy course and there are rocks in the way, and in order for her to steer her own ship of life carefully and safely, she should have all the assistance possible through a cooperative spirit on the part of you children." The husband, by all means, should be instructed particularly to do everything possible to keep his own attitude calm, and to keep the home in a happy, cheerful condition. I think the psychological attitude is the most important of all, because, as Doctor Burch has so well said, the menopause is a natural phenomenon, and just as death must come to all, the end of this trying period will come in time. It is fortunate indeed if the woman can be carried through it by a cheerful attitude on the part of her husband and a cooperative spirit on the part of the family.

DR. L. E. BURCH (closing): I merely want to thank Doctor Crook for his excellent suggestion. It is one that I will carry out. I think it will be of value to everyone present to have a talk with the husband, as he has suggested, and also explain conditions to the family.

DRUGS IN TREATMENT OF HEART DISEASE*

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PHYSICIANS a generation or two ago had three drugs for heart disease:

1. They gave salts to get rid of edema.

2. Digitalis, but always in inadequate doses.

3. Morphine which is still the best drug in cardiac emergencies.

At present there is used either for its direct or indirect effect on the circulation a bewildering large number of drugs—some thirty or forty different medicaments.

Therefore, for simplicity and efficiency, it occurs to me that it would be worth our time to endeavor to pick out the drugs which are really useful and practical for different cardiac conditions and emergencies. A correct diagnosis is always essential before beginning treatment, and we take an electrocardiogram and fluoroscope in every heart case which comes to the office. Time and your patience will not allow us to discuss diagnostic procedures in this short paper.

DIGITALIS

There are two great indications for digitalis:

1. Congestive heart failure.
2. Auricular fibrillation, especially if the rate is rapid and the pulse deficit great.

Digitalis depresses the function of sino-auricular and auricular ventricular nodes, contracts the heart muscle fibers, thus decreasing the size of the heart, lessens auricular and ventricular irritability, increases the length of diastole, and also increases the force of systole. Dosage: one cat unit for every ten pounds of body weight plus one cat unit for every day you take to fully digitalize, remembering that the amount of digitalis one eliminates daily varies from one to three grains, and therefore maintenance dose has to be individualized. Usually one cat unit (one and one-half grains) will be sufficient for daily maintenance dose.

Giving liquid digitalis is never accurate

and never efficient and there is no excuse for prescribing infusion of digitalis. The last pharmacopeia omits it entirely.

We should remember that relatively more digitalis should be given to children and light weight adults. It has been conclusively proven that the greater the cardiac damage the less tolerance to digitalis, and a rapid rate may be the first sign of digitalis overdosage rather than pulsus bigeminy, slow pulse, vomiting, and headache.

DRUGS USED IN IRREGULARITIES—PAROXYSMAL TACHYCARDIA

The following drugs are useful:

1. Ipecac. The vomiting which ensues causes a quick reflex through the vagus.

2. Quinidin. Five grains every three hours for several doses if there is no idiosyncrasy to the drug.

3. Mecholyl (one-sixth grain to one-half grain) subcutaneously.

One should always have its physiological antidote, atropin sulphate, ready for severe symptoms of fainting, sweating, nausea, vomiting, dyspnea, precordial pain, and collapse might occur. Personally, I prefer ipecac or quinidin.

Pressure on eyeballs or on vagus in carotid sheath rarely relieves. Recently ergotamin tartrate (one ampule) intramuscularly has given quick relief.

AURICULAR FIBRILLATION

First try to ascertain the cause. For example, if thyrotoxic, proper measures to handle thyroid will relieve.

1. Digitalis is a drug of choice if the patient has a chronic fibrillating heart with a rapid rate. A slow fibrillating heart can be efficient, and trying to reestablish regular rhythm is neither wise nor necessary.

2. Quinidin is useful in paroxysmal auricular fibrillation and in fibrillation following thyroidectomy.

3. Uginin is often useful if the patient cannot take digitalis.

HEART BLOCK

1. Ephedrine (three-eighths of a grain twice daily) often prevents Stokes Adams syndrome.

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2. Barium chloride and atropin sulphate are used, but are unsatisfactory.

3. Adrenalin is especially useful in ventricular stand still and often is lifesaving. This can be injected directly into the heart or intramuscularly if the emergency is not too great.

4. Recently a new drug has been introduced and a return to normal rhythm has occurred by use of small doses (two and one-half milligrams) of benzedrine sulphate and another paredrine, gives greater promise of success.

DRUGS IN CONGESTIVE HEART FAILURE

Useful drugs in congestive heart failure are:

1. Digitalis in full doses.

2. Morphine at first for rest, soon superseded by adequate nerve sedatives. They must have rest at all costs.

3. Ammonium nitrate (seven and one-half grains) in enteric-coated tablets, three tablets with meals.

4. If there is no definite serious kidney involvement, salyrgan, with theophyllin or mercupurin, should be given intravenously every third day. If this is impractical, a mercurin suppository will answer. Salyrgan alone is not as effective and is more toxic.

5. Some xanthine base as aminophyllin or phyllicin. Personally, I alternate with ammonium nitrate for three days, then for three days give two tablets aminophyllin crushed three times a day or two enteric-coated tablets of theophyllin with sodium acetate three times a day. We rarely give an ampule of aminophyllin or theamin intramuscularly or intravenously. Phyllicin and diuretin (fifteen grains three times daily) are both useful diuretics.

6. In hypertensive cardiac disease with failure, lower the pressure with sodium nitrite or nitroglycerin, thereby taking the load off the left ventricle and then treat the failure in the usual manner as described above.

DRUGS IN PAROXYSMAL NOCTURNAL DYSPNEA

This is left-sided heart failure. Here the right ventricle sends the blood into the lungs, but because of left ventricular fail-

ure, it is not pumped adequately on into general circulation. About one hour after falling asleep the patient sits up in bed suddenly with dyspnea, cough with pinkish sputum, the so-called cardiac asthma. It is a failure of left ventricle due to inadequate coronary circulation.

Drugs used:

1. Morphine in full doses.

2. Usually if the blood pressure is high, nitroglycerin under the tongue to reduce the pressure, and thereby take the load off the left ventricle.

3. Seven and one-half grains aminophyllin in fifty cubic centimeters of fifty per cent glucose intravenously.

4. If acute edema of lungs persists, bleeding or blood pressure instruments around extremities kept at level of diastolic pressure will help.

5. In order to prevent a recurrence of attacks, full digitalization and aminophyllin is indicated.

ANGINA

Nitroglycerin grains (1 150) under the tongue is the best drug treatment. However, we would like to emphasize the use of nitroglycerin as a prophylactic. Often, if physical, mental, or emotional strain is absolutely unavoidable, nitroglycerin as a preventive of retrosternal pain is very useful, and many doses daily have been used without harmful effects.

In a nervous, apprehensive patient, of course, theominal, aminophyllin with phenobarbital or theamin and amyral are beneficial.

Possibly the relief comes from the nerve sedative, as it is still a debatable question whether xanthines are coronary dilators. We believe they do dilate the coronaries.

There are two organic diseases which interfere with coronary circulation.

1. Luetic aortitis with the involvement of the mouth of coronary arteries. The pain can be cured by proper thorough antiluetic treatment, but do not use neosalvarsan.

2. Anemia. When angina is associated with anemia which cuts down the oxygen carrying power of blood relief from pain can be obtained by bringing the blood count up to normal.

CORONARY THROMBOSIS

Drugs most helpful in coronary thrombosis are:

1. Morphine in large doses and repeated if necessary. In order to reduce shock, pain must be relieved quickly. Recovery from the acute attack is in direct ratio to the rapidity with which pain is fully relieved.

2. Since the pain is due to disproportion between oxygen demand and oxygen supply, oxygen is indicated if morphine does not quickly relieve.

3. Possibly aminophyllin intravenously may be helpful.

4. If vomiting persists, glucose (twenty-five to fifty cubic centimeters of a fifty per cent solution) very cautiously can be given intravenously.

5. Quinidin cautiously if pulse is rapid or irregular.

Later if congestive failure or fibrillation, digitalis can be used, but digitalis has no place in the early treatment of coronary thrombosis.

What about the ever-increasing number of cases of hypertensive degenerative heart disease occurring usually in men in fifth and sixth decades of life. We describe it as:

1. The failing heart of middle life.

2. Chronic coronary insufficiency.

3. Possibly the result of many small infarctions, due to multiple small occlusions, resulting in many small areas of fibrosis, replacing normal heart muscle cells.

Symptoms.—Breathlessness, retrosternal discomfort, often attacks of indigestion with fullness and belching either after meals or on exertion.

Treatment.—Rest. Proper treatment of failure if present helps as described above, but often neither the doctor nor patient is satisfied with the progress of the case. Recently we have found that coramine (twenty drops three times daily by mouth over long periods of time) improves the condition of those suffering from chronic coronary insufficiency. It does no harm; it does not upset stomach.

We know coramine is a respiratory stimulant and relieves Cheynes Stokes breathing. Many feel that it is not a cardiac stimulant. Others think coramine:

1. Dilates coronaries, increasing the blood supply to myocardium.

2. Stimulates directly the heart muscle.

3. Acts on the extrinsic cardiac nerves. This is not proved. The electrocardiogram shows increased voltage in all the ventricular complexes when coramine is given.

Oxygen is very valuable in many cardiac conditions and can be given through the nasal tube. It relieves pain in angina and thrombosis, since anoxemia is usually the cause of distress. It helps in pulmonary edema and in cardiac decompensation. Even a slight increase in oxygen content of inspired air seems to be beneficial.

Glucose is often valuable in cardiac conditions remembering that fifty cubic centimeters of fifty per cent glucose given at the rate of ten cubic centimeters per minute is just as much a strain on the right side of the heart as 500 cubic centimeters of a five per cent solution given at forty cubic centimeters per minute.

We still think the xanthines are useful in heart disease. They are certainly good diuretics, and we believe they improve heart action by increasing coronary flow. An ampule of aminophyllin or theamin, when given intravenously or intramuscularly, will obliterate Cheynes Stokes breathing, and it is useful in treating and preventing nocturnal paroxysmal dyspnea. It is not understood why it is so helpful in bronchial asthma. Possibly the relief comes from improvement in bronchial circulation.

In cardiovascular disease with a final involvement of kidneys and impending uremia, concentrated glucose with seven and one-half grains ampule of aminophyllin intravenously twice daily is indeed very helpful.

Just a word about medical shock. This is peripheral circulatory failure, not in any sense heart failure. It is characterized by a disproportion between vascular bed and blood volume, the causative agent acting on the vascular wall, dilating the small arteries and capillaries, making them more permeable to plasma. This is caused by many things: bacterial toxins as in pneumonia and streptococcus septicemia, severe diabetic acidosis, extensive burns due to sudden release of histamine.

Treatment.—Fifty cubic centimeters of fifty per cent glucose intravenously immediately, followed by 1,000 cubic centimeters of ten per cent glucose in a short while. Then as soon as possible a blood transfusion. Adrenalin, caffeine, and other pressor drugs can do harm.

Finally too much emphasis cannot be placed on the individualization of the regimen. We are busy, we presume our patients know more than they do, our instructions are often vague, indefinite, and failure to understand us may be a powerful factor in preventing the desired therapeutic progress in any given case. For example, let us consider a patient with angina. Merely a vague statement that activity must be cut down will not answer. First, explain in easy, intelligible terms the nature of his malady, stating that his heart cannot respond to the various stresses and strains as formerly without producing pain, breathlessness, or other discomfort. He must learn what his limits are and stay within those limits. We as physicians should explain that as long as the patient avoids the things which in the past have precipitated an attack he can be comfortable and can carry on restricted activities especially if these activities are executed slowly and deliberately.

In conclusion, only a part of the many drugs used in treatment of cardiovascular disease have been presented, and time would not allow a scientific discussion of the many interesting points in differential diagnosis.

DISCUSSION

DR. O. N. BRYAN (Nashville): Doctor Bibb has given us a concise and valuable paper dealing with the common drugs used in the treatment of different heart diseases. Digitalis is too often thought of as the one drug for the treatment of heart disease. It is most valuable in certain heart diseases, but, on the other hand, there are other heart conditions in which it is not to be used. Doctor Bibb spoke of the inadequate dosage used generations ago. Too often in the present time cases are seen where inadequate dosage of digitalis is being used. The sooner a physician adopts some definite rule to follow and some definite brand of digitalis to use the better success he will have with his cardiacs. I was glad to hear the doctor discourage the use of liquid forms of digitalis because of the inaccuracy of the dosage and inefficiency of the drug. In treating paroxysmal tachy-

cardia better results will be had from the use of ipecac and quinidin than from the use of other procedures and drugs. It stands without argument that the two big indications for the use of digitalis in heart diseases are: (1) congestive heart failure, and (2) auricular fibrillation. The four big indications in treatment of congestive heart failure are: (1) restrict the fluid intake to 1,500 or less in twenty-four hours, and if necessary resort to the more strenuous Karrell diet; (2) complete digitalization; (3) mercurial diuretics, in the form of salyrgan, novasural, mercupurin or salyrgan and theophillin, and mercurin suppositories act very happily, provided there is no serious kidney impairment that prevents their use; (4) morphine must be used at anytime necessary to obtain the proper rest.

Angina pectoris is most successfully treated by the use of nitroglycerin 1 150 to 1 200 grain under the tongue. Often the anginal patient will be able to anticipate an attack and abort the same by the use of nitroglycerin under the tongue. Small doses of barbiturates are often useful in the nervous apprehensive individual.

Coronary thrombosis must be treated promptly with large doses of morphine, and in case relief is not rather prompt from the morphine and the patient is restless, then oxygen should be given. Digitalis is not used in these cases until there are evidences of cardiac failure. If frequent premature contractions are noted then quinidin should be used to ward off the possible onset of ventricular tachycardia. In case auricular fibrillation develops quinidin should be used. Doctor Bibb speaks of large doses of coramine being used in these cases of coronary thrombosis. I doubt the wisdom of this procedure, because we are trying to keep this heart as quiet as possible by the use of large doses of morphine and bed rest.

DR. W. C. CHANEY (Memphis): Mr. President and Members of the Society: Doctor Bibb told me that he was going to discuss the practical side of the treatment of heart disease. He has certainly done that in an excellent manner.

A lot of heart cases are emergencies, and when we are called to see these patients we are apt to overtreat them. Putting the patient to bed, getting him quiet with morphine and getting all the relatives out of the room and getting a good nurse to take care of the patient are all highly important.

Doctor Bibb and Doctor Bryan both have emphasized the abuse of digitalis. Too often a doctor sees a patient and the heart is a little fast and he starts out with the tincture or infusion of digitalis; second, he is probably using a preparation that is not potent. We prefer to use digitalis leaves in tablet form, remembering that a grain and a half should be given for each ten pounds of body weight, approximately. Doctor Bibb said that you cannot figure out the dose for any individual, which is true; you have to feel your way

along. Then remember in giving digitalis that the body gets rid of it at the rate of about a grain and a half a day, so if you give it over a long period of time you have to reckon on that. A grain and a half is, on the average, the maintenance dose.

Oftentimes when we start using digitalis we forget to figure out the diagnosis. A great many times, for example, we will see a heart that is fibrillating, which may be due to an old mitral stenosis, but sometimes the cause is a very mild hyperthyroidism, and sometimes that hyperthyroidism is very mild and it is not recognized. In these cases, instead of using digitalis, it is a very good thing to use Lugol's solution or some iodine preparation.

A number of years ago we saw a few patients with a congestive heart failure following a hypertension over a long number of years. Autopsies showed that we were overlooking areas of hyperplasia in the thyroid gland, and I think very often if you have an elderly person, a person in the seventies, for example, who shows evidence of congestive heart failure, you must remember that they do not get stimulated with hyperthyroidism, but they get an apathy. They are depressed by overactivity of the thyroid gland. Very often, even though you cannot prove that you are dealing with a case of mild hyperthyroidism, therapeutic use of Lugol's solution will bring about very marked improvement.

In the question of auricular fibrillation and digitalis, of course, that is a very important drug. I would like to emphasize that quinidin is somewhat dangerous and should be used guardedly. Sometimes following thyroidectomy the patient's heart will begin to fibrillate, and then the problem comes up as to what to do. I should like to emphasize this point: if the medical man takes charge of that case of hyperthyroidism before the surgeon operates on it, it is possible to get that patient in such good condition that the heart will not fibrillate after the thyroidectomy is done.

With reference to attacks of paroxysmal tachycardia, I was interested to hear Doctor Bibb refer to having the patient try some simple method first, such as pressure on the eyeballs. I have seen a number of those, and these patients after a while learn how to get over their attacks. Some of them scratch the side of the neck, some of them press on their eyeballs, some of them learn to fold their arms, bend over, and put pressure on the abdomen.

In the great problem of coronary thrombosis I think the most important thing is to realize first that this is what you are dealing with and that it is not a gall-bladder attack. Once the diagnosis is made, we start in with large doses of morphine. (In this I am still emphasizing the points Doctor Bibb has brought out.) Assure the patient that nothing is going to happen to him, especially if the patient happens to be a doctor. This is "doc-

tor's disease" as is angina pectoris. The use of morphine and oxygen when the patient gets short of breath and every now and then small doses of glucose may be used, either under the skin or into the vein. I think glucose given into the vein in small quantities, and given very slowly, is not dangerous. On the other hand, it is helpful.

In the hypertensive type of heart, again I want to emphasize that Doctor Bibb said the use of nitrites to lower the blood pressure has proven very often helpful. I am sure Doctor Bibb meant to use very small doses and coax the blood pressure down and not force it down. In some of these cases where the blood pressure is over 200, nature often has a very good reason for putting it up there; maybe the circulation in one of the organs required a blood pressure of 200 to get the blood through that organ.

In angina pectoris, I believe that as a rule, we have done too much to scare these people half to death. In talking to a patient I think we should never use the word "angina pectoris" because it strikes terror in him, and if he knows he has angina pectoris, we should emphasize the fact that often a man may live ten years. Next, I think we should try to teach them to live within the limits of their heart and not to do those things that tend to bring on the attack.

I certainly got a lot out of Doctor Bibb's paper, and I want to thank him for presenting it to us.

DR. JAMES L. BIBB (closing): I want to thank these two gentlemen very much for their discussion. Doctor Chaney is quite right about the danger of quinidin in auricular fibrillation. If there is an intramural clot there, reestablishing the rhythm and causing embolus is a dangerous thing. What he said about paroxysmal tachycardia is true. I was trying just to speak of the drugs. There is a little trick that has been tried by many of these patients, and they have gotten instant relief. Take a deep breath and go through the motion of letting the air out, but do not breathe out; go through the motions of letting the air out of the lungs, but really do not expire. Some of them get quick relief from that.

What he said about oxygen is certainly true. Just a little increase in the oxygen content of the air in the lungs seems to be able often to turn the trick.

I am glad he emphasized using glucose in small amounts. I wonder if we realize that fifty cubic centimeters of a fifty per cent glucose given at the rate, say, of ten cubic centimeters per minute is just as much of a strain on the right side of the heart as 500 cubic centimeters of a five per cent solution given, say, at forty cubic centimeters per minute. We sometimes forget that and give it too rapidly.

PROTHROMBIN DEFICIENCY AND VITAMIN K IN THE NEWBORN PERIOD*

WILLIS H. THOMPSON, M.D., Minneapolis, Minn.

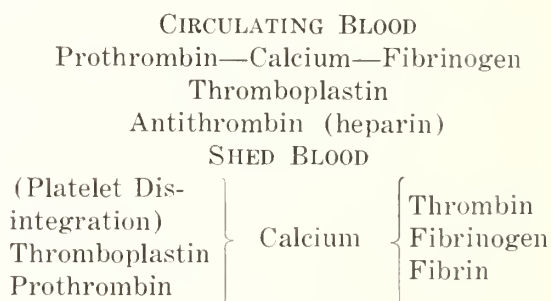
THE EARLY PART of 1939 marked the beginning of a series of important studies of the newborn infant. Previous to these investigations hemorrhagic disorders of the neonatal period were characterized by their unpredictable occurrence, confused classification and uncertainty in preventive and therapeutic response. A clearcut etiological basis has been discovered for this hitherto obscure bleeding tendency. Disorders accompanied by hemorrhages from the mucous membranes of the gastrointestinal tract, the genitourinary surfaces, into the body cavities and viscera, as well as from and into the body surface tissues, are now undergoing reinvestigations which will undoubtedly result in a much more rational etiologic classification than that which obtains at present. The whole subject of prevention and treatment is likewise being revised upon a rational basis, and, although still in its infancy, has already contributed tremendously to progress in antihemorrhagic therapy.

In the short period since April, 1939, a rapidly increasing number of studies have appeared in the literature concerned with prothrombin deficiency in newborns. These have been the direct outgrowth of studies of the hemorrhagic tendency in patients with jaundice. The investigation into both of these groups of patients had their primary stimulus in 1935, when Quick, Stanley-Brown, and Bancroft¹ developed satisfactory methods for the quantitative estimation of prothrombin.

The purpose of this paper is to bring together some of the important facts which these various studies have contributed to our knowledge of this defect in the clotting mechanism.

Probably the chief difficulty which we have hitherto encountered in anticipating hemorrhage in the newborn has been the lack of a method sufficiently sensitive to measure any stage of clotting mechanism

disturbance other than the frank hemorrhagic state. With Quick's modification of the older Howell method for measuring prothrombin clotting time, we now have a means of discovering the tendency to hemorrhage before the actual stage of bleeding occurs. The discovery of the early stages of the progressive decline in the clotting mechanism was not possible when only bleeding and clotting times were determined. The studies which led to this new knowledge were based upon the classic theory of the clotting mechanism as described by Howell and illustrated by the following diagram:



In the circulating blood the prothrombin is held inactive by the antithrombin (heparin), preventing its interaction with fibrinogen to form the fibrin clot. In the shed blood thromboplastin is released from the platelets to neutralize the heparin, thus allowing the clot to form. Quick's method of determining the prothrombin clotting time modifies the older Howell method by adding an excess of thromboplastin to a known amount of oxalated serum which contains the unknown prothrombin. Then an excess of calcium solution is quickly added and the time required for the formation of the clot is estimated. This is an indirect measure of the amount of prothrombin present, but with calcium and thromboplastin in excess the only variable is prothrombin, since numerous studies have shown that irregularities in the normal fibrinogen level of .3 to .5 gram per 100 cubic centimeter are extremely rare. Thus the time required for clotting is a quantitative estimation of the amount of prothrombin in the plasma.

*Read before the Tennessee State Pediatric Society, Chattanooga, April 9, 1940.

THE QUICK TECHNIQUE FOR PROTHROMBIN ESTIMATION

Three cubic centimeters of blood are obtained by venipuncture and mixed with .3 cubic centimeters of sodium oxalate solution and centrifuged. One-tenth cubic centimeter of the clear plasma is mixed with .1 cubic centimeter of the thromboplastin solution, and .1 cubic centimeter of the calcium solution is quickly added. The time required for the clot to form is noted. The normal is between thirteen and fifteen seconds.

Solutions required are:

1. Sodium oxalate: 1.34 grams of anhydrous pure sodium oxalate dissolved in 100 cubic centimeters of distilled water.

2. Calcium chloride: 1.11 grams of anhydrous chemically pure calcium chloride are dissolved in 400 cubic centimeters of distilled water.

3. Thromboplastin solution: mix .3 grams of dehydrated rabbit brain with five cubic centimeters of .8 per cent sodium chloride containing .1 cubic centimeter of sodium oxalate solution. This mixture is incubated at 45 degrees centigrade for ten minutes and centrifuged for three minutes to obtain a clear, milky supernatant fluid. The rabbit brain is prepared as follows: the brain is stripped of the pia and is macerated in a mortar and extracted with acetone. The solvent is poured off and more acetone is added, and the process is repeated until a granular powder is obtained. This product is dried at thirty-seven degrees centigrade and placed in a clean stoppered tube. It retains its activity for a week.

Recently, Kato and Poncher² have modified Quick's method to introduce a micro-prothrombin procedure. This obviates the necessity for vena puncture in infants by using whole capillary blood in only ten to fifteen cubic millimeter amounts, which can be obtained by heel puncture as frequently as desired. A third method, also using capillary blood has been published recently by Bray and Kelly.³

The early studies using Quick's^{4, 5, 6} method were chiefly concerned with the findings in patients with jaundice, in whom calcium, fibrinogen, and platelet deficiencies had pre-

viously been thought responsible for the bleeding tendency, but who now were discovered to have prothrombin deficiency as the cause of their bleeding. Studies of numerous other disorders characterized by hemorrhage naturally followed this discovery. These included such diseases as hemophilia, purpuras with and without platelet deficiency (with which the author was concerned in 1937), Banti's disease, hemolytic icterus, aplastic anemia, metrorrhagia, etc. Many of these are not concerned with prothrombin deficiency.

PROTHROMBIN LEVELS IN THE BLOOD OF NEWBORNS

Four years elapsed between the development of the Quick prothrombin estimation and its application to the newborn. Early in 1939, Quick and Grossman⁷ measured the prothrombin clotting times of the blood of a few newborn infants and reported marked fluctuation occurring in the first few days of life. This finding was confirmed during the same year by numerous other workers.^{8, 9, 10}

The early reports, because of the small numbers of infants studied, did not serve to establish the range of variations in the prothrombin concentration in the newborn period. They did indicate, however, that the majority of infants have, until the fifth day of life, a prothrombin clotting time sufficiently above the normal adult level to be considered dangerous; *i. e.*, that most infants under five days of age are potential bleeders. The results of investigations up to the present time suggest that spontaneous bleeding will occur when the prothrombin concentration is ten per cent of normal. At twenty per cent the least trauma will initiate bleeding. From twenty to fifty per cent is considered a dangerous range because a further decline to the bleeding level is apt to occur very rapidly. Careful observation is indicated when the level is between fifty and seventy-five per cent, while levels above seventy-five per cent are considered to be within the normal range.

The first reports by Quick, in which only a small number of infants were studied, suggested that at birth the prothrombin

concentration was normal. There followed a rapid decline to reach the lowest levels on the second and third day, after which the concentration began to rise, reaching normal again around the fifth day. Subsequent studies on larger numbers of infants have shown, however, that a normal prothrombin clotting time at birth is by no means the rule. Even in the cord blood levels as high as 100 seconds have been reported. Indeed, Kato and Poncher² in the largest series so far reported (173 infants) show that on the first day most infants, both mature and immature, have prothrombin clotting times well above the normal averaging in both groups between forty and fifty seconds. This prolonged prothrombin time gradually improves so that by the ninth or tenth day it averages twenty-five seconds in full-term mature babies. In the prematures characteristic instability is evidenced by marked individual daily fluctuations in the prothrombin time. It thus appears that the original conception of a prothrombin concentration curve, which begins at the normal level on the first day, drops to low levels from the second to fifth day, and rises again to normal, must, in the light of more extensive studies, be changed to one which shows a low level (high prothrombin clotting time) at birth and gradually rises to normal in about ten days. These larger and more recent studies were made with capillary instead of venous blood, which does, by reason of the red blood cell content, somewhat reduce the prothrombin content, and thus gives a consistently slightly higher prothrombin clotting time (about twenty seconds for normal adults) than plasma which Quick used. This does not, however, influence the shape of the curve.

FACTORS INFLUENCING THE CONVERTIBILITY AND LEVEL OF PROTHROMBIN

The factors entering into the conversion of prothrombin into thrombin and its interaction with fibrinogen to form the fibrin clot must all be evaluated before defects in the clotting mechanism can be properly interpreted. (a) Disturbances in the anti-thrombin (heparin)—thromboplastin bal-

ance. Under normal conditions the anti-thrombin in shed blood is prevented from inactivating the thrombin by the release of proper amounts of thromboplastin. In hemophilia this release is thought to be inadequate. Further studies are needed in relation to the subject under discussion. (b) Both the level of calcium, which is known to be low at times, and its ionic state in the blood, need further evaluation in their important relationship to the clotting mechanism. (c) Fibrinogen, which, because its normal level is extremely low, will be difficult to evaluate as a factor in clotting defects in the unstable newborn period. (d) Prothrombin. The deficiency of this substance in the newborn's blood has been found by Waddell¹¹ to occur with greatest regularity in the winter months. The mother's vitamin K intake appears also to be important. The influence which vitamin K exerts upon its concentration is certainly not clearly understood, although the recent progress in that direction has been phenomenal.

VITAMIN K

In 1929, Henrik Dam¹² of the University of Copenhagen, studying the fat metabolism of the chick, noticed that after two or three weeks on a fat-free diet fatal hemorrhages developed, which he found to be associated with very low plasma prothrombin levels. The unknown substance lacking in this fat-free diet he named vitamin K¹³ (from the Danish word for clotting: koagulation). Rapid progress in information regarding this vitamin since then includes: alfalfa prevented low prothrombin and hemorrhage in cattle, Roderick,¹⁴ United States government, 1931; fish meal contained the vitamin-experimental, McFarlane,¹⁵ et al, 1931; vitamin K, synthesized by bacterial action, established by Dam and Schnheyder,¹⁶ 1935, who also found it in hog liver fat, putrefied fish meal and in green vegetables such as alfalfa, spinach, kale; first crude extract from alfalfa (one kilogram yielded two milligrams), Almquist,¹⁷ 1936; prothrombin low in persons with obstructive jaundice, Quick, Stanley-Brown, and Bancroft,¹ 1935; biliary fistula in dog and rat produced low prothrombin, Hawkins

and Brinkhous,¹⁸ 1936; source of prothrombin in liver-chloroform liver necrosis experiments, Smith, Warner, Brinkhous,¹⁹ and Quick, 1937;²⁰ postoperative bleeding in gall-bladder surgery minimized by use of vitamin K and bile salts, Butt, Snell, and Osterberg,⁵ 1938. From these important observations it becomes evident that intestinal absorption of this fat soluble vitamin obtained from food or bacterial sources does not occur in the absence of bile, and that it is not utilized to synthesize prothrombin in the liver if the liver is damaged. Pathologic changes in the mucosa of the upper intestinal tract may also prevent absorption of the vitamin, even though bile is present.

In the newborn infant the absence of food sources, the absence of intestinal bacteria, and a poorly functioning liver may all contribute to the hypoprothrombinemia. Response to vitamin K suggests that the first two are the most important.

HEMORRHAGE IN THE NEWBORN

Prothrombin deficiency in frank hemorrhagic disease of the newborn was reported by Whipple²¹ in 1912. Unfortunately too little attention was given to his report. Quite unsatisfactory attempts to define this loose clinical syndrome have been made repeatedly. These have included limiting the diagnosis to those infants having active hemorrhage without signs of syphilis, sepsis, trauma, hemophilia, icterus gravis, erythroblastosis, hydrops, anemia neonatorum, hemorrhage into body cavities and viscera (including intracranial hemorrhage)²² not accompanied by other signs of hemorrhage and in which the bleeding and coagulation times are prolonged over ten minutes. This not only has made the diagnosis extremely rare, but has excluded a long list of disorders characterized by a tendency to bleed because the prerequisite of a prolonged clotting time was lacking. That this is erroneous has become quite evident since the development of the prothrombin clotting time as a much more sensitive indicator of a bleeding tendency. With a prothrombin time that is greatly prolonged, the clotting time is frequently found to be

well within normal limits. Icterus gravis, hydrops congenitus, and anemia neonatorum have recently been linked as a clinical triad by Dam, Tage-Hansen, and Plum.²³ The connecting link, demonstrable in each case, is a well defined hypoprothrombinemia. Administration of vitamin K was so effective in rapidly raising the quantity of prothrombin that it seems likely that vitamin K deficiency is an important factor in these conditions.

In the light of present knowledge the exclusion of all cases not showing multiple points of spontaneous bleeding also appears artificial. It seems more likely that the degree of prothrombin deficiency will determine whether the bleeding will occur spontaneously or as a result of trauma, granting of course that gross laceration of blood vessels will be followed by hemorrhage in the presence of a normal clotting mechanism.

INTRACRANIAL HEMORRHAGE

With this conception of borderline or subclinical levels of prothrombin deficiency, many of the hitherto inexplicable instances of cerebral hemorrhage developing during the first five or six days after apparently normal deliveries now have a definite etiologic basis. That they are responsible for from twenty-five to forty per cent of neonatal deaths emphasizes the importance which this new information may have in reducing the present high neonatal death rate. The finding at autopsy in infants and particularly in premature infants who die after the first day, a massive cerebral hemorrhage without visible laceration of membranes has been a very common experience. Slow oozing from minute bleeding points would undoubtedly cease promptly if the clotting mechanism were normal. These examples of bleeding tendency, in which a single site only is involved, should serve not only as a stimulus to reclassify hemorrhagic disease of the newborn infant, but also indicates the consideration of routine prophylaxis against this catastrophe.

TREATMENT

With the recent phenomenal progress in the solution of one of the many perplexing problems concerned with the neonatal ad-

justment period, we are faced with the application of this newer knowledge. The need for further studies to determine the frequency of thromboplastin deficiency, antithrombin excess, calcium or fibrinogen deficiencies as additional factors in this neonatal clotting mechanism defect are needed before concluding that prothrombin deficiency is always the only factor to be corrected. Revising not only the indications for, but the methods of, prophylaxis of the bleeding tendency are now in progress. How much will be accomplished by the application of these contributions, by far the most significant since Minot²¹ in 1852 first described the condition, will depend upon how wisely they are applied. With regard to the first of these revisions the studies already made suggest that the milder degrees of prothrombin deficiency may, with only the ordinary amount of delivery trauma, result in petechial cerebral hemorrhages sufficient to cause respiratory disturbances. If the recent studies which indicate that the prothrombin clotting times of infants on the first day average twice the normal time are confirmed, then the importance and desirability of this test on every newborn infant is at once evident. Or, if this is not possible, the institution of adequate prophylactic measures immediately after delivery or perhaps before birth may serve as an alternative procedure.

Information relative to the animal, vegetable, and bacterial sources of the antihemorrhagic factor have rapidly increased since Dam first demonstrated its existence. Although its true identity is not yet fully established, a pure, potent principle of vitamin K has been isolated by Doisy²⁵ from putrefied fish meal, which is a solid crystalline salt, at room temperature. The finding by Almquist²⁶ that a simple naphthoquinone has vitamin K activity has led to the synthesis of a derivative 2—methyl—1, 4—naphthoquinone possessing marked antihemorrhagic properties.²⁷ If the clinical trials now in progress demonstrate its satisfactory effectiveness as a substitute for the extracts from fish meal and alfalfa, the synthetic compound will probably entirely replace the more costly extract. Sterile

aqueous solutions of 2—methyl—1, 4—naphthoquinone for intravenous and sterile oily preparations for intramuscular injection can then be added to the oral preparation already in use. Given in one milligram doses, it has reduced prolonged prothrombin times in newborn infants to normal within two hours.¹¹ Waddell,⁹ first to prove the effectiveness of vitamin K in shortening the prothrombin time in infants, used the alfalfa ether extract marketed in oil and called "Klotogen." He recommends an initial dose of two cubic centimeters by mouth and a repetition of this or smaller doses for the next two days. The finding by Hellman¹⁰ and Waddell¹¹ that prothrombin deficiencies at the time of birth, as revealed by prolonged prothrombin times in the cord blood, can be corrected by giving vitamin K to the mother before delivery suggests another means of prophylaxis. The best means of administration of the antihemorrhagic principle will doubtless be determined in the near future by the intensive work now in progress. Its effectiveness in reducing neonatal mortality will then rest upon the recognition by the profession of its importance, and thence upon its widespread application.

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SULFANILAMIDE AS A PROPHYLAXIS IN SCARLET FEVER

C. B. LAUGHLIN, M.D., Greeneville

Sulfanilamide is an absolute preventive in scarlet fever exposures. I have used it in fifteen families, and there has not been any cases developed scarlet fever. The number of exposures were as follows:

Number of cases, 15; number of children exposed, 34; number of adults, 31.

The ages of the children were from eight months to fourteen years, and those that were exposed varied from five months to eighteen years. No effort was made to isolate the patients; some slept in the same bed with those that were exposed, and many in the same room.

It is not necessary to give large doses. The following table is an illustration of the size and frequency of doses of prontylin tablets:

Age	Dose	Times Daily
1 to 6 months-----	¼ tablet	4
6 months to 1 year-----	1/3 tablet	4
2 to 4 years-----	½ tablet	4
4 to 6 years-----	1 tablet	3
6 to 12 years-----	1 tablet	4
12 years -----	2 tablets	3

In cases where prophylactic treatment is delayed, it is wise to give the above doses every four hours for twenty-four hours, then use the above schedule for one week, and in some cases to satisfy the family one may allow those that desire to take one dose daily for the second week.

The size doses suggested do not cause nausea, and the prontylin tablets can be crushed and suspended in water for children that are too small to swallow the tablet; for instance, if one desires to make three doses of one tablet use three teaspoonfuls of water and give a teaspoonful as necessary.

I felt that I should report these findings, because it is of a great deal of satisfaction to be able to assure a frightened parent that none of the other children will have scarlet fever from the present exposure.

Also I have found that prontylin is a good treatment for scarlet fever, especially to prevent complications, such as otitis media, endocarditis, and nephritis, and it shortens the duration of the acute stage. Large doses should not be used and only until the fever has become normal.

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H. H. SHOULDERS, M.D., Editor and Secretary

JUNE, 1940

THE ISSUE

SHALL PATIENTS AND DOCTORS RETAIN THEIR FREEDOM OF JUDGMENT IN THE MATTER OF MEDICAL CARE, OR SHALL THIS FREEDOM BE SURRENDERED TO SOME GOVERNMENTAL AGENCY?

EDITORIAL

AN INTERPRETATION OF MORTALITY STATISTICS IN THE UNITED STATES

The death rate of any given population is generally accepted as a dependable index of the well-being of the people.

It is a dependable index for several reasons. First, a death and a funeral can rarely be faked. In the second place, serious disabling illness, of any character, is reflected in an increased mortality rate.

Statistics as to illness (morbidity) are not, as a rule, very dependable, and may be, and often are, actually misleading. Morbidity statistics, in the main, are statistics of opinion. A great deal of supporting evidence is necessary to prove their accuracy. For example, figures as to disabling illness are, of necessity, very inaccurate unless the nature of the illness and the extent of disability are proven by dependable procedures.

We are all aware of the fact that statistics of disabling illness in the United

States have been published and used to prove the point that the people suffer excessively from illness and from lack of medical attention. Such statistical evidence is based upon opinion as to illness and we now know that the opinion was not a professional opinion. Such statistics were nothing more than a collection of the opinions of the persons who were alleged to have suffered from serious disabling illness.

The actual death rate in the registration area of the United States is relatively very low. This fact should put to rest the fears and anxieties created by propaganda activities as to poor medical care. This fact can be interpreted as reflecting a high order of medical care and, in the main, the exact opposite of the figures published as to illness. One or the other must be wrong. And we must remember, mortality figures cannot be faked.

A rather startling fact is revealed in some figures published recently by the Department of Commerce, Bureau of Vital Statistics. They relate to the death rate of the United States for the years 1920 to 1928, inclusive, with a provisional crude death rate for the year 1939. They are as follows:

Year	Rate
1920	13.0
1921	11.6
1922	11.7
1923	12.2
1924	11.7
1925	11.8
1926	12.3
1927	11.4
1928	12.1
1929	11.9
1930	11.3
1931	11.1
1932	10.9
1933	10.7
1934	11.0
1935	10.9
1936	11.5
1937	11.2
1938	10.6
1939	(Provisional) 10.7

It will be noted that the death rate reached a very low point in 1933. It will be

noted also that the high point in the death rate for the present decade is in 1936.

These figures are of great significance for the following reasons: There was never a time in the history of the United States when as much money was spent by various agencies, both private and governmental, to promote the welfare of the people than in these latter years. Probably more money was spent in the year 1936 than in any other of the nine years. Notwithstanding these expenditures, the mortality rates do not reflect the slightest benefit. To the contrary, the year 1936 showed the highest death rate of any year since 1929, and the provisional rate for the year 1939 is just as high as the year 1933 and the final figures may be higher. These are facts which cannot be dodged.

It will be interesting to see the interpretation that will be placed upon these figures by individuals and agencies who have had charge of the expenditure of vast sums of money in the name of human welfare.

The question is naturally raised: Has the expenditure of money in the name of welfare accomplished the purpose for which it was appropriated by the congress? Has it achieved the welfare that was intended by the congress and promised by the agencies?

Nobody feels like opposing a measure that is proposed in the name of welfare. To do so, subjects one to the liability of being accused of opposing human welfare. Nobody desires or even relishes the idea of being accused of opposing a measure for welfare.

This situation finds a parallel in other activities. A few years ago it was alleged that if universal education were made compulsory and financed by the government, crime and poverty would disappear. This assertion was supported by statistical evidence. Statistical data were collected and tabulated to show that a large per cent of the people in prisons, jails, and almshouses were illiterate. The conclusion drawn from the figures was that their condition was due to illiteracy, and if they were not illiterate they would not be in almshouses and prisons. We now know that such a deduction

was utterly erroneous. We now have more educated criminals than we had before. We also have more literate people who are unable apparently to take care of themselves. Nobody can oppose the right sort of education. But now the question is being raised and even debated: Has education failed?

The time is rapidly approaching when some serious study must be made of the subject of welfare. Certainly the administration of welfare funds, as at present directed, fail to achieve the benefits that were intended by the givers, and promised by the sponsors.

WELFARE AGENCIES AND POLITICAL ACTIVITY

A great deal has been said from time to time in the last few years with regard to the political activities of welfare agencies.

A great deal is being said at the present time about subversive activities carried on within welfare agencies.

There can be no doubt that a welfare administrator with allegiance to another flag than our own is in position to exert a greater influence over welfare clients than if he were busy earning a living by honest effort in some other line of endeavor.

It is noted that the American Legion has taken exceptions to some actions taken by a group of welfare workers in a convention at Chattanooga not long ago.

It looks very much like some of them are inclined to "bite the hand that feeds them."

These facts, together with the utter lack of any improvement in the well-being of the people as reflected in mortality figures, suggests at least, that more efforts might have been exerted in the direction of political results than in the direction of improving the conditions of the people.

It is perfectly possible for welfare agencies to collect and tabulate their own statistics and then interpret them and lead the people in most any direction they want to so long as they carry the banner of *welfare*.

A BASIC SCIENCE LAW

The House of Delegates instructed the Legislative Committee to use its utmost en-

deavors to secure the passage of a basic science law by the legislature of Tennessee in 1941.

The principle embodied in the basic science law is now in effect in a large number of states, and it has proven to be a sound and effective means of promoting and preserving high standards in the practice of the healing art.

The fundamental principle in the Act is this: That no person is fit to practice any form of the healing art without a knowledge of the basic sciences of anatomy, physiology, chemistry, bacteriology, and pathology. This principle holds true with regard to each and every branch of the healing art that has been recognized and legalized by the state. It applies to medicine, to osteopathy, and to chiropractic.

A bill has already been prepared for introduction. Its essential provisions are as follows: First, that any person who wishes to practice any form of the healing art must first stand an examination in the basic sciences named above.

If a candidate is found qualified in the basic sciences, he is issued a certificate which enables him to go before the examining board governing the particular form of practice he wishes to engage in. If found qualified that board will issue a license to practice that form of the healing art he has prepared himself to practice.

The bill provides further that members of the Board of Examiners in the basic sciences shall not be practitioners of any form of the healing art. This provision should remove any prejudice against the medical profession.

The Act also defines the healing art as follows: "For the purpose of this Act, any license authorizing the licensee to offer or undertake to diagnose, treat, operate on, or prescribe for any human pain, injury, disease, deformity, or physical or mental condition, is a license to practice the healing art."

It is very important that members of the medical profession take this matter up with their representatives in the house and senate when elected to the end that they will

arrive in Nashville with some understanding of the proposed legislation.

DEATHS

DR. M. B. GARNER

Dr. M. B. Garner, Nashville, College of Physicians and Surgeons, Memphis, 1907; aged sixty-two; died May 11, 1940, following a long illness.

DR. T. J. COBLE

Dr. T. J. Coble, Shelbyville, Vanderbilt University, School of Medicine, Nashville, 1898; aged sixty-nine; died May 19, 1940.

DR. J. L. MORTON

Dr. J. L. Morton, Shelbyville, University of Tennessee, College of Medicine, 1903; aged sixty; died May 31, 1940.

RESOLUTIONS

AN APPRECIATION TO DR. WORCESTER ALLEN BRYAN

BY PAUL DEWITT, M.D.

The relentless reaper has reentered our portals and removed another of the outstanding and dearly beloved members of the medical profession of Tennessee.

Worcester Allen Bryan was taken in the twinkling of an eye on April 30, 1940, while en route home from Hot Springs, Arkansas. His devoted life partner administered to him during the awful ten minutes of a coronary thrombosis. With no known lesion or premonitory symptoms, the suddenness of his passing came like a lightning bolt to his family and his host of friends.

Born September 1, 1873, near Alexandria, Tennessee, the eldest son of Joshua Lester and Elizabeth Jane Wood Bryan, he received his early education in the county schools. Having been born a student, his thirst for knowledge drew him to Cumberland University at Lebanon, where the degree of bachelor of arts was conferred during his twentieth year. Then came a period of pedagogy in a county school at Lynnwood, providing experience and funds for further study at Cumberland and a master's degree in 1897.

The succeeding two years proved to be the most arduous and exacting of his whole career. While completing a three-year course in medicine in two years, he taught languages, especially German, at the Nashville Bible School (now David Lipscomb College), and during this time every minute of the twenty-four hours was so regimented as to provide the greatest number of hours of work.

After receiving the degree of doctor of medicine from the Medical Department of Vanderbilt University in 1899, Doctor Bryan served a short period as assistant to the chair of medicine, and in 1900 was appointed assistant to the chair of surgery. From that time his surgical progress never waned.

After serving as an assistant in the office of the late Drs. Duncan and Paul F. Eve for three years, he opened offices with Dr. Louis LeRoy, with whom he was associated for several years. In 1907, Dr. O. N. Bryan graduated in medicine and was associated with his brother until the latter's death. The association of these two brothers for a third of a century was a beautiful saga of harmony, understanding, and brotherly love.

Into the golden opportunity, the turn of the century brought to surgical progress, this young devotee threw himself with ever-increasing thirst for knowledge. He pursued special studies at the New York Polyclinic in 1902 and the University of Vienna in 1910. One of his outstanding characteristics was a constant endeavor and desire to teach, instruct, and share his knowledge with others. With his most pleasing and magnetic personality, one never passed a half-hour without gaining some information or inspiration for extra endeavor.

Passing through the subordinate positions, he became professor of clinical surgery in Vanderbilt in 1911, which position he held until his passing. From 1902 to 1925, he was professor of oral surgery in the School of Dentistry.

In 1913, Doctor Bryan published his lectures on the "Principles of Surgery" in the form of a textbook, which has been a standard in the Medical Department of Vander-

bilt for many years. His versatility was demonstrated by the range of the topics of his articles from "Surgery of the Sympathetic Nervous System" to "Cleft Palate," the "Prostate," and "Phenol in the Treatment of Tetanus." Of his many papers, especial notice and interest were centered in his "Correlation of Symptoms, Pathology, and Results in Cholecystectomy" read before the Texas Surgical Society and reprinted in the *Annals of Surgery* of September, 1933; "Total Hysterectomy—a Review of 177 Cases," by W. A. Bryan and C. C. Trabue, *Annals of Surgery*, June, 1936; "Phenol in the Treatment of Tetanus" in 1933.

His writing was clear, concise, and of a most pleasing style, and requests for reprints were received from several foreign countries.

He was a member of the local, state, and American Medical Societies, also the American College of Surgeons, the American Board of Surgery, was vice-president of the Southern Surgical Association, and a member of the Governing Committee of the Gorgas Memorial Institute. He was a member of the surgical staff of the Protestant, Nashville General, and Vanderbilt Hospitals, and the Watauga Sanatorium at Ridgetop.

Doctor Bryan possessed an ever-abiding faith in an all-wise and eternal God. He was constant in his attendance at divine worship and unceasing in his labors for the advancement of religion in general, and especially the welfare of the Vine Street Christian Church, of which he was chairman of the Board of Elders. Each day on bended knee he implored the help, assistance, and forgiveness of his Creator.

On September 7, 1904, he was married to Miss Emma Horatio Berry. Three daughters and a son blessed their union. His devotion as husband and father was symbolized by almost idolatrous love and veneration, in which he was held by all of them.

Without ostentation he performed his duty to the community and to those less privileged than himself. More than once I have known him to more than double the

amount allotted to him for charitable enterprises, considering it to be his privilege and his duty. As a Mason of the thirty-second degree, he was punctual and faithful in his duties and also served as illustrious potentate of Al Menah Temple of the Mystic Shrine in 1931.

It is my especial privilege to speak of "W. A." as a friend. For many years, the proximity of our respective offices threw us into almost daily contact of social or professional conversation—we were comembers of two literary societies—and for years were partners on fishing trips to Florida, lasting sixteen days. I believe I knew him as thoroughly as one man can know another. He was kind, sympathetic, understanding, helpful, straight from the shoulder, and sincere. He was lacking in double dealing and hypocrisy, and the littlenesses which confound many men who otherwise might be truly great. To say more of a real man would be superfluous.

Toward the close of his hey-day, while still in active service, surrounded by loved ones, friends, and admirers, he passed on to his Maker to receive the reward of those who hear the welcome words:

"Well done good and faithful servant, enter thou into the joys of thy Lord."

IN MEMORIAM OF DR. RUFUS ELIJAH FORT
BY BENJAMIN F. BYRD, M.D.

Doctor Fort was born in Robertson County, Tennessee, March 19, 1872, and died March 22, 1940, at a local hospital after a prolonged illness.

Doctor Fort attended the public schools of his native county, and later attended Montgomery Bell Academy and the University of the South at Sewanee, Tennessee. He graduated from Vanderbilt Medical School in 1894, did postgraduate work in New York City and returned to Nashville, where he was superintendent and chief surgeon at the Nashville City Hospital from 1897 to 1903.

He was one of the organizers of The National Life and Accident Insurance Com-

pany in 1902 and was vice-president and medical director until his death. In the same year he became chief surgeon of the Tennessee Central Railroad, which he held until 1916. He operated his private hospital from 1904 to 1920. For eight years he was president of the State Board of Health, and at one time was president of the Nashville Academy of Medicine and Davidson County Medical Society. Doctor Fort was one of the organizers of the Protestant Hospital, and was one of the first to move his patients there. He was connected with this institution until he retired from practice. About 1912 he was elected dean of a proposed new University of the South Medical School to be located in Nashville, but the school never became active. He was a fellow of the American College of Surgeons and a member of the American Medical Association, and at one time he was vice-president of the Southern Surgical and Gynecological Association. During the war he was chairman of the local Exemption Board. He was a skillful surgeon and was the first to completely excise the clavicle, first rib, and part of the sternum. In 1936, the University of the South conferred upon him the honorary degree of Doctor of Science.

Doctor Fort led an exemplary life and was a man of many outstanding characteristics. He was ever ready to support his convictions, always expressed himself definitely and to the point, and the word "deceive" was not in his vocabulary. He was the rather rare combination of a successful doctor and financier. He owned one of the finest Middle Tennessee farms and one of the nation's finest jersey herds, having bred many prize winners.

In 1909, he was married to Miss Louise Clark of Boston, Massachusetts. Surviving him are his wife, two daughters, Cornelia and Louise of Nashville; three sons, Dudley of Atlanta, Georgia, Doctor Garth of Rochester, New York, and Rufus E., Jr., of Nashville; and one sister, Miss Lizzie Fort, Nashville.

NEWS NOTES AND COMMENTS

ABBOTT LABORATORIES FELLOWSHIPS IN CHEMISTRY

For the academic year, 1940-41, Abbott Laboratories has established fellowships in several universities with important departments of organic chemistry and biochemistry. The fellowships carrying stipends of \$650 per year will be available to graduate students in the last or next to last years of graduate work leading to the doctorate degree. The recipients who are to be selected by the universities in which their work is being done are not limited as to the subjects on which they will work.

The object of the fellowships is to provide means for the carrying on of additional scientific work in American universities. The future progress of chemical developments in this country will depend upon the availability of well-trained and qualified men and it is the intent of Abbott Laboratories in establishing these fellowships to lend encouragement in these general fields.

Grants will be made to the following universities:

In organic chemistry—Cornell, Harvard, Illinois, Michigan.

In biochemistry—California, Columbia, Cornell.

During the convention of the American Medical Association in New York City, June 10-14, 1940, the Jefferson Medical College Alumni Association will hold its Reunion Banquet on Wednesday, June 12, at 7:00 o'clock P.M., at the Murray Hill Hotel on Park Avenue at Fortieth Street. Tickets are \$2.50 each.

Request for reservations may be addressed to me at that hotel.

THOMAS F. DUHIGG, M.D.,
Chairman, Dinner Committee.

Dr. Jefferson C. Pennington announces the association of Dr. Spencer Johnson at Suite 527, Bennie-Dillon Building, Nashville. Practice is limited to urology and urological surgery.

Dr. R. J. Buckman, who has practiced medicine in La Follette for the past several years, has moved to Cincinnati, where he will be assistant medical director for the William S. Merrell Company.

WARNING

Numerous complaints have reached the Registry of Medical Technologists regarding the activities of a Mr. C. A. Bartholomew of Red Bank, New Jersey, who has launched an organization styled the "American Medical Technologists," which purports to issue certificates of qualifications. It is soliciting membership especially among graduates of nonapproved schools or those who are ineligible for examination by the standards of the registry.

Bartholomew has never taken the registry examination, but assumes the designation of M. T. after his name in his drive for membership. He has also presumed to give approval to a number of commercial schools which are not approved by the registry.

This enterprise is not sponsored by any scientific society, but appears to be motivated by commercial aspects, as a five dollar registration fee is solicited from those desiring to join.

To obviate any confusion of this unauthorized movement with the legitimate work of the Registry of Medical Technologists of the American Society of Clinical Pathologists, this warning is issued to all interested in maintaining high standards to disseminate the true information to the unwary about the standing of the so-called "American Medical Technologists."

WOMAN'S AUXILIARY

President.....Mrs. W. T. Braun
Memphis

President-elect.....Mrs. W. W. Potter
Concord

Press and Publicity.....Mrs. H. B. Bracken
Nashville

PRESIDENT'S REPORT

MRS. MATT B. MURFREE
Murfreesboro

As I stand before you this morning to give an account of my work for the past year as president of the Woman's Auxiliary

to the Tennessee State Medical Association, a feeling of deepest gratitude takes possession of me.

In the beginning, the fact that you honored me by expressing confidence in my ability to serve as your leader touched me very deeply, and inspired me to live up to the standards set by my predecessors so far as I was able.

Throughout the year, I have enjoyed and appreciated the many courtesies extended me as president of this organization. I have felt keenly the friendship, cooperation, understanding, and generous tolerance of every member. Each of you has strived unselfishly and loyally to make the organization a little more secure on the foundation so ably laid by our predecessors.

I have no complaint either to make of your correspondence. My mail poured in and your letters were most welcome.

Doctor Abell, in addressing the women attending the National Convention in St. Louis last May, very aptly said that the Auxiliary being only seventeen years old was still high school age. This pleased his audience because we like being called young. Therefore he told us we are still in the formative period. According to this way of reckoning, the Tennessee Auxiliary is still grammar school age and we want to avoid the pitfalls into which we as children might fall before we reach maturity.

In order to avoid these pitfalls we must abide by the advice of our advisory council; we must be to the Medical Association just what the name implies—an auxiliary; and we must have clearly in mind our destination.

The place we wish to reach is the preservation and improvement of the medical profession.

First.—Our advisory council has asked us to help them in the tremendous task of enlightening the public in order that they may steer clear of the whirlpool of socialized medicine.

We are aware that many thousands of women's organizations throughout the nation are receiving propaganda from the advocates of this form of practice. Every convert to this idea is one more stumbling

block to the preservation of the standards of American medicine. We cannot stop this propaganda, but our organization can do much among intelligent lay groups. We can do this by informing ourselves and stimulating our members to the principles involved in this change of method.

We are intelligent women, we reach out into every organization in our respective communities, we can mold opinions. We have an important part to play, and I believe we all agree that American medicine is worth saving.

Second.—Our advisory council has asked us to spread the circulation of *Hygeia*, which is the voice of the American Medical Association speaking to the laity.

Third.—To help create an interest in the American Medical Association radio broadcasts every Thursday afternoon at 3:30.

Fourth.—We should put sufficient stress on the unity and friendliness that our social gatherings create among the families of the profession. The most important of these gatherings is the observance of Doctors' Day. I noticed from the reports sent in by the various counties that not one of them failed to celebrate Doctors' Day. Some of them liked the idea so well that they had two or three parties a year, to which they invited their husbands.

The routine work of the office of president has been carried out to the best of my ability.

Early in the fall I sent out letters to each county president, giving a suggested outline of the work for the year. These letters were first approved by the advisory council. Four form letters were sent to each county during the year, and the response to these letters was most gratifying.

In September, 1939, the fall State Board meeting was held in Nashville at Belle Meade Club. The business meeting was preceded by a luncheon. This meeting was well attended. All the counties sent in their plans for the year. All except two were represented by their presidents. The officers and chairmen also stated their plans.

I enjoyed very much the privilege of representing the Tennessee State Auxiliary

at the National Convention in St. Louis in May, fifteenth to nineteenth, also at the National Board meeting in Chicago on November 19, 1939. These meetings were most inspirational. I will not go into detail here, as my reports were published in the issues of the JOURNAL current at the time. On yesterday I distributed to members of the board copies of minutes and reports of the National Convention.

My visits to the various county auxiliaries, my day in Chattanooga planning this convention, my contacts with the national officers and chairmen, my dealings with the advisory council, my close association with the members of the state board, the new friendships formed, I enjoyed to the fullest. And I gladly gave you my time and my effort.

If I am so fortunate as to be on the board next year in whatsoever capacity I serve, I ask the privilege of dropping in on the auxiliary meetings whenever possible, for I by no means am giving up my interest in your welfare.

As the time comes to turn over the leadership to my successor, I wish to say that for the things of worth that have come from this year's effort, the credit does not belong to me. It belongs to you. To all of my co-workers, from the members of the official board to the newest members of the most recently organized auxiliary and to all of you my heartfelt thanks.

RUTHERFORD COUNTY

Members of the Woman's Auxiliary of the Rutherford County and Stones River Academy of Medicine met in April at the home of Mrs. C. M. Smoot of Woodbury.

Mrs. J. B. Black, president, presided over the business session when reports from the recent state convention at Chattanooga were given by her and Mrs. Matt Murfree.

Dr. Willis Thompson spoke to the members, stressing the importance of prenatal examination. Following the program, a musical program was presented and the hostess served a salad course.

MEDICAL SOCIETIES

Davidson County:

May 14—"Radical Prostatectomy for Carcinoma," by Dr. Burnett Wright. Discussion by Dr. E. H. Barksdale.

"Neurodermatitis," by Dr. Howard King. Discussion by Dr. E. E. Brown.

May 21—"Report of Delegates to Tennessee State Medical Association," by Drs. O. N. Bryan and J. P. Gilbert.

"Observations on the Crippled Children's Program," by Dr. R. W. Billington.

"National Physician's Committee: Davidson County's Support," by Dr. J. O. Manier.

"Proposed Basic Science Law," by Dr. L. W. Edwards.

May 28—"Histoplasmosis," by Dr. W. A. DeMonbreun. Discussion by Dr. Henry Meleney.

"The Supposedly Normal Child Presents Himself," by Dr. J. C. Overall. Discussion by Dr. W. O. Vaughan.

Dyer, Lake, and Crockett Counties:

A meeting of the society was held at Nanny Boyett's Place, Reelfoot Lake, on June 5. The following papers were read:

"The Diagnosis and Management of Thyroid Disease," by Dr. Harwell Wilson, Memphis.

"Dyspepsia," by Dr. R. L. Sanders, Memphis.

"A Discussion on the Problem of Hypertension," by Dr. Lyle Motley, Memphis.

"The Surgical Aspects of Hypertension," by Dr. Eustace Semmes, Memphis.

"The Renal Aspects of Hypertension," by Dr. Tom Moore, Memphis.

Following the scientific program, those present thoroughly enjoyed a bountiful banquet.

Members please note that following our usual custom the society will not meet in July and August.

C. L. DENTON.

Gibson County:

The Gibson County Medical Society met in regular session, May 14, with twelve members present.

Two excellent papers were delivered by Dr. Chas. Webb, Jackson, on "The Acute Surgical Abdomen," and Dr. John E. Powers, Jackson, on "Streptococcic Meningitis."

Knox County:

May 7—"Head Injuries," by Dr. R. G. Waterhouse. Discussion led by Drs. Chumley and Smeltzer.

May 14—"Chronic Sinusitis," by Dr. R. G. Reaves. Discussion led by Drs. Reese Patterson and W. W. Potter.

May 27—"Clinical Aspects of Polycystic Renal Disease," by Dr. E. P. Nicely. Discussion by Drs. Barry, Muse, Neil, and Williamson.

June 4—"Undulant Fever," by Dr. W. H. Enneis. Discussion by Drs. E. R. Zemp and C. J. Carmichael.

Madison County:

The Madison County Medical Society met in regular session, June 4, 1940, at the Southern Hotel for dinner.

This meeting was one of the best of the year, with twenty-nine members and four visiting doctors present.

The society heard interesting talks by two Memphis physicians. Dr. Joe H. Francis spoke on "Treatment of Duodenal Ulcer" and Dr. J. A. Crisler discussed "Management of Various Types of Goiter."

The society will hold outdoor barbecues in July and August, resuming its indoor sessions in September.

(Signed) S. M. HERRON, M.D., *Secy.*

Robertson County:

The Robertson County Medical Society held its regular monthly meeting on May 21. Dr. W. W. Winters, president, presided.

Dr. John S. Hawkins, Springfield, read a paper on "Prenatal Care." Discussion led by Dr. W. S. Rude, Ridgeway.

Members present were: Drs. W. W. Winters, J. S. Hawkins, W. S. Rude, J. S. Freeman, W. B. Dye, R. D. Moore, A. R. Kempf, W. P. Stone, and W. F. Fyke.

Washington County:

The regular monthly meeting of the Washington County Medical Society was held at the John Sevier Hotel, Thursday, June 6, 7:30 P.M.

The death of Dr. J. B. Woodruff of New Orleans, a member of the society, was announced. Dr. W. J. Matthews and J. L. Hankins were appointed as a committee to draw up resolutions regarding his death.

Dr. H. B. Cupp gave a paper on "Spinal Anesthesia," and Dr. Wallace Poole, in collaboration with Dr. Carroll Long, read a paper on "The Use of Pentothal Sodium as an Intravenous Anesthetic." These papers were discussed by Dr. Paul McBee, E. T. West, Gibson, Miller, and Parker. A movie was shown depicting the use of various anesthetics, spinal, general, local, and intravenous.

W. D. HANKINS.

OTHER MEDICAL SOCIETIES

The West Tennessee Medical and Surgical Association met in Jackson, Tennessee, May 24. We had an excellent meeting with approximately ninety registrations. Dr. George W. Crile was guest visitor. The title of his paper was "Essential Hypertension." The next meeting will be in Dyersburg, Tennessee.

The following officers were elected: Dr. G. W. Brasher, Jackson, president; Dr. James Price, Dyersburg, first vice-president; Dr. A. T. Hicks, Camden, second vice-president; Dr. Geo. R. McSwain, Paris, secretary (re-elected); Dr. John Jackson, Dyer, assistant secretary.

GEO. R. MCSWAIN, M.D., *Secy.*

In the closing session of the two-day annual meeting of the Upper Cumberland Medical Society, held in Cookeville, May 28 and 29, officers were elected as follows:

Dr. E. D. Groce, Chestnut Mound, president; Dr. V. O. Buttram, Crossville, first vice-president; Dr. H. B. Nevins, Livingston, second vice-president; Dr. C. C. Howard, Glasgow, Kentucky, third vice-president; Dr. L. M. Freeman, Granville, secretary-treasurer.

The state park at Standing Stone Forest near Livingston was selected as next year's meeting place.

Fifty-six doctors attended the meeting.

The Middle Tennessee Medical Society met in Spring Hill on May 16. The following officers were elected:

Dr. B. H. Woodward, Spring Hill, president; Dr. C. F. Hollabaugh, Nashville, vice-president; Dr. R. A. Daniel, Jr., Nashville, secretary.

VANDERBILT MEDICAL SOCIETY

APRIL 5, 1940

1. "Cases of Meckel's Diverticulum in Vanderbilt Hospital," by Dr. Thos. E. Wyatt.

Seven cases of Meckel's diverticulum were shown. They represented every complication from simple hemorrhage to hemorrhage with perforation and intestinal obstruction. The only complication which was not demonstrated was the presence of neoplasm in the Meckel's diverticulum. Two of these cases were very interesting in that one was associated with purpura and caused an intussusception. Another case, a thirteen-year-old child, caused intermittent intussusception. Several sections and slides were shown to demonstrate the presence of gastric mucosa in the diverticulum.

Discussed by Drs. Barney Brooks and Sam L. Clark.

2. "The Relation of Capillary, Colloid Osmotic, Tissue, and Intraintestinal Pressures to the Rate and Direction of Flow of Fluid Through the Intestinal Wall," by Dr. Herbert S. Wells.

Graded congestion of the mesenteric veins and lymphatics diminishes the rate of absorption of isotonic saline from isolated loops of bowel of anesthetized dogs. Absorption ceases entirely when mesenteric venous pressure exceeds the pressure within the loop by an amount which is equal to the osmotic pressure of the plasma proteins. Greater degrees of congestion result in secretion of fluid into the loop at rates which increase geometrically. The findings support the physical-circulatory theory of intestinal absorption and secretion of fluid previously proposed by the author.

Discussed by Drs. Barney Brooks and Henry E. Meleney.

3. "Vitamin E. Muscular Atrophy and the Nervous System," by Dr. W. de Gutiérrez-Mahoney.

Diets deficient in vitamin E have led to muscular atrophy in animals. The atrophy has been prevented by supplying adequate vitamin E in the natural form of wheat germ oil, or in the synthetic form as alphatocopherol. Pathological studies have shown that the muscular atrophy follows damage to the anterior horn cells of the spinal cord and the peripheral nerves.

Four patients with progressive neural myatrophy were treated with wheat germ oil. Three of these have shown great improvement, but the fourth, who was in a very advanced state of disorder when first treated, has neither improved nor become worse. The syphilitic variant of myatrophy has not improved by treatment with the vitamin.

Discussed by Drs. Karl E. Mason and Ann S. Minot.

VANDERBILT MEDICAL SOCIETY, MAY 3, 1940

1. Three cases of "Osteosclerosis Fragilis," by Dr. Herbert C. Francis.

Three cases of osteosclerosis fragilis (marble bones) were presented. A slide demonstration of the roentgenological bone changes and a brief review of the literature with regard to etiology, clinical manifestations, and X-ray diagnosis was given.

These cases were discussed by Drs. Katharine Dodd, Ann Minot, and John B. Youmans.

2. "Anesthetic Activity of Optical Antipodes," by Dr. Thomas C. Butler.

Certain theories (notably that of Meyer and Overton) ascribe narcotic activity solely to the physical properties of the drug rather than to specific structure. Since optical antipodes are identical in their physical properties, comparison of antipodal narcotics furnishes a test of such theories. The antipodal forms of sec.-butyl alcohol, Alpha-arabinochloralose, and Beta-arabinochloralose have been compared as anesthetics in mice. The antipodal alcohols are equal in activity, while Alpha-*I*- and Beta-*d*-

arabinochloralose are more active than their respective antipodes. This would indicate that an asymmetric mechanism is involved in narcosis with the chloraloses, but not with sec.-butyl alcohol.

This paper was discussed by Drs. Morton F. Mason and Paul D. Lamson.

3. "Vitamin B₁ Excretion as Determined by the Fermentation Method: Its Metabolic and Clinical Significance," by Drs. John B. Youmans, E. White Patton, Allen Kennedy, Sanford C. Monroe, and Burness Moore.

The urinary excretion of vitamin B₁ in normal and deficient subjects has been studied by means of the fermentation method of Schulz, Atkins, and Frey. Using this method, the urinary excretion has been correlated with the clinical course of patients before and after the administration of thiamin.

The effect of certain physiological factors on the urinary excretion of vitamin B₁ in normal subjects has been studied. These factors include diuresis and oliguria, diurnal variations and the relative urinary and fecal excretion following oral administration of thiamin.

The close relationship of urinary excretion of vitamin B₁ as determined by this method to the daily dietary intake has been demonstrated experimentally in a normal subject.

This paper was discussed by Drs. C. S. Robinson and Tinsley R. Harrison.

COMING MEETINGS

Mississippi Valley Medical Society, Hotel Fort Armstrong, Rock Island, Illinois, September 25, 26, 27. Dr. Harold Swanberg, Quincy, Illinois, secretary.

Southern Medical Association, Louisville, Kentucky, November 12-15. Mr. C. P. Loran, Empire Building, Birmingham, Alabama, secretary.

Tennessee Valley Postgraduate Medical Assembly, Knoxville, October 10 and 11. Dr. Jesse C. Hill, Knoxville, secretary.

Tennessee State Medical Association, Nashville, April 8, 9 and 10, 1941. Dr. H. H. Shoulders, secretary.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By HUGH BARR, M.D.
Medical Arts Building, Nashville

The Management of Complications Arising During Cyclopropane Anesthesia. Harold R. Griffith. New York State Journal of Medicine, February 1, 1940.

After more than 5,000 cyclopropane anesthetics personally administered by the author since October, 1933, he states that there were no deaths on the operating table or postoperative deaths that could be attributed to the anesthetic. During that time there were five anesthetic deaths: one each from chloroform, ether, avertin, intravenous evipal, and spinal novocaine. The following complications are discussed: respiratory depression, pulmonary atelectasis, acute pulmonary edema, post-anesthetic encephalopathy, postoperative shock, and increased bleeding.

Respiratory depression is combatted by increased oxygen supply, pressing on the bag to reestablish respiration, use of the endotracheal tube, and if caused by spasm of the larynx oxygen and helium is given through an endotracheal tube. Pulmonary atelectasis is prevented by an open airway, the avoidance of irritating agents such as ether added to the mixture, and pharyngeal and tracheal suction after the anesthetic.

Acute pulmonary edema is combatted by suction through endotracheal tube and the administration of oxygen. Postoperative encephalopathy is extremely rare and probably due to localized cerebral anemia, but the author has never had to contend with such a case. Postoperative shock is managed by the use of coramine, oxygen, glucose saline, and blood transfusion. Increased bleeding during operation may occur in a few patients, but it is of no great importance.

DERMATOLOGY

By A. H. LANCASTER, M.D.
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Mapharsen in Treatment of Syphilis in Office Practice.

Charles R. Rein, M.D., and Fred Wise, M.D. Journal of American Medical Association, 113: 1946 (November 25), 1939.

The authors state that mapharsen has been thoroughly investigated and many reports have been published to attest to its effectiveness in producing early sterilization and disappearance of spirochetes in open primary lesions, with rapid healing of concomitant and later clinical manifestations, and in effecting and maintaining a reversal of serologic reactions within a reasonable length of time. They were especially interested in reports pertaining to

the relatively low toxicity of therapeutic doses, the absence of severe nitritoid reactions, and freedom from reactions, except those affecting the gastrointestinal tract.

The clinical material for this contribution consists of 113 patients receiving a total of 2,342 intravenous injections with an average of 20.7 injections per patient.

The authors express the opinion that the improvement of both subjective and objective symptoms to mapharsen compare favorably with the response to neoarsphenamine and arsphenamine therapy. They report prompt healing of cutaneous lesions and a complete or partial reversal of serologic reactions.

In this series the majority of patients received alternating courses of mapharsen and bismuth compounds consisting of twelve injections each per course. Others received treatment by the concurrent method; that is, one injection each of a bismuth compound and of mapharsen per week. A few were treated with mapharsen alone; that is, without the support of a heavy metal.

The clinical and serologic response to mapharsen therapy was much more favorable in patients who were treated by the concurrent method—*i. e.*, a combination of mapharsen and a bismuth compound.

The initial dose was .02 gram. This was increased to .04 gram for females and .06 gram for males. The author reported one male who received daily injections of mapharsen for sixteen days, the dose varying from .03 gram to .06 gram, with the average of .055 gram, without any evidence of toxic manifestations. This is evidence of the low toxicity of mapharsen. Rapid administration of mapharsen reduced the frequency of venous spasm. The other reactions received were similar to those from other arsenicals except they were fewer and milder.

The authors' conclusions are: (1) Mapharsen is therapeutically adequate to control early infectious syphilis, producing rapid sterilization of active reactions. (2) The majority of syphilitic patients treated by the physician in private practice are in the latent asymptomatic stage. Mapharsen, possessing relatively lower toxicity, is preferable in such cases to other drugs, which have a greater tendency to produce untoward reactions.

FEVER THERAPY

By E. E. BROWN, M.D.
Doctors Building, Nashville

Electropyrexia: Technic of Application and Therapeutic Indications. Stafford L. Osborne, B.P.E., and D. E. Markson, M.D., F.A.C.P., Chicago, Illinois. *Annals of Internal Medicine*, Vol. 12, No. 2, August, 1938.

The authors discuss two methods used in producing artificial fever in man. First, by means of an externally heated environment as the Ket-

tering hypertherm, infra-red radiation, electric light cabinets, and hot-water baths. Second, the production of heat in the body by means of high frequency currents such as diathermy, high frequency electric fields, or electromagnetic induction.

They have tried every method advocated up to the above time in an endeavor to find the best method available. Their experiences led them to the conclusion that the use of high frequency current for the production of artificial fever has a much wider margin of safety for the patient than external heating methods and that it was far more comfortable.

They quote Gibson, Kopp, and Evans, studies on plasma volume: "Kettering hypertherm air-condition cabinet, reduction in blood volume was extreme, and occurred early in the course of fever reduction, with the result that a severe degree of tissue dehydration takes place by the time therapeutically desired temperatures were obtained. With diathermy, a considerable reduction in plasma volume did not take place until high temperatures had been reached."

These investigators state that the degree of dehydration and danger of serious circulatory disturbance is considerable during fever induced by the Kettering hypertherm, even when fluids are liberally given by mouth. Also that the degree of alkalosis was most marked and that the pulse rate was twenty beats higher when external heat was used as opposed to the finding when internal heat was used.

The authors describe the Zipper bag treatment technic and the electromagnetic cabinet technic.

They discuss treatment of general paresis, arthritis, gonorrheal arthritis, multiple sclerosis, asthma, and chorea minor.

INTERNAL MEDICINE

By R. B. WOOD, M.D.
By D. R. THOMAS, M.D.
Medical Arts Building, Knoxville

The Vitamin B. Complex and Its Constituents in Functional Digestive Disturbances. Faris E. Chesley, M.D.; Jean Dunbar, Ph.D.; Lathan A. Crandall, Jr., M.D., Ph.D. *American Journal of Digest Diseases*, January, 1940.

The authors seeking to establish the relationship of vitamin B and functional digestive diseases employed a yeast concentrate for their relief. Convinced of the above relationship, they next sought to establish what factor or factors might be responsible. The measurement of thiamin excretion in the urine by rat growth assays were used as criteria for deficiency states.

Most cases selected for tests were dispensary patients, proven negative by X-ray of G I and gall-bladder disease. A concentrate of Brewers' yeast extract of 125 I V per gram and riboflavin thirty-five S B unit per gram was used, having been given to forty-four individuals for a period of three to

twelve months. The percentage of relief and a comparison to results obtained with nicotinic acid (100 to 200 milligrams per day) is noted in the following table:

	Percentage Satisfactory on Vitamin B Complex	Percentage Satisfactory on Nicotinic Acid
Flatulence	67	57
Abdominal distress	64	56
Alternating constipation and diarrhea	74	69
Constipation only	75	71
Diarrhea only	50	50
Weakness and fatigue	60	17
Nervousness	63	16
Anorexia	100	30

Eleven patients were given crystalline thiamin, and nine cases riboflavin with no benefit noted in respect to G I symptoms.

A short reference is made to the articles of Steinberg and to Borsook, et al., in relation to similar observations along the same line of investigation, but the authors feel their extract is superior, especially in the relief of nervousness, anorexia and weakness, a common syndrome of the neurotic.

The authors conclude that the use of whole vitamin B complex is preferable to single factors in treatment, as deficiency of one factor is accompanied by other deficiencies. Further vitamin B complex offers more than antispasmodics, sedation, bland diet, etc.

Studies in Hypertensive Heart Disease. David Davis, M.D., and Max J. Klainer, M.D., Boston, Massachusetts. The American Heart Journal (February), 1940.

I. THE INCIDENCE OF CORONARY ATHEROSCLEROSIS IN CASES OF ESSENTIAL HYPERTENSION

The authors seek to present more data on the relationship of essential hypertension and coronary atherosclerosis. The amount of sclerosis in patients with and without hypertension was estimated and certain errors thought to be in some of the previous reports were avoided. These supposed errors were: (1) The assumption that in the absence of valvular disease the presence of cardiac hypertrophy was evidence of past hypertension. (2) Repeated blood pressure readings were known to have been made previous to the terminal illness. (3) The inclusion of patients with hypertension of renal origin. (4) The inclusion of diabetes. (5) The failure to control age and sex factors.

The data were obtained in 407 cases from routine necropsy protocols and in 100 cases by the injection-dissection technique. Cases were consecutive and all diseases that effected the heart or vessels were rejected.

In 137 cases with essential hypertension, 324 controls were analyzed. At all ages a significantly higher incidence of coronary sclerosis was noted in patients with hypertension. On the other hand, the incidence of slight coronary disease was much higher in patients without hypertension. The percentage of cases of hypertension in which there was

marked coronary disease was as high before as after fifty. Between the ages of thirty and forty-nine years, the incidence of severe disease in controls and in patients with hypertension was fifteen per cent and forty-four per cent, respectively, and at the age of seventy or more, thirty-two and forty-four per cent. The average for the six decades for patients with hypertension was forty-five per cent; for the controls, twenty-seven per cent. In comparing the two techniques, the injection methods reveal a higher incidence of marked narrowing and occlusion in both groups.

In the nonhypertensive group the incidence of marked disease was much greater in men than in women below the age of sixty. After seventy the incidence is about the same. The incidence in women with hypertension is increased over the non-hypertension group and is about the same in the hypertensive group as in men without hypertension.

The work of Bell and Clawson is open to criticism because the data was obtained from a group including enlarged hearts from congestive failure. The group also contained five per cent diabetics.

II. THE ROLE OF HYPERTENSION, PER SE, IN THE DEVELOPMENT OF CORONARY SCLEROSIS

The high incidence of coronary sclerosis in the hypertensive group has been explained as being due to the effect of the elevated pressure on the walls. The authors present data to show that pressure, per se, is not the cause. They studied 137 patients with essential hypertension, forty-six with hypertension of renal origin and 324 without hypertension.

In estimating the severity of hypertension, they considered the average height of the blood pressure and duration of the hypertension. For estimating the effect of hypertension on the circulation, two criteria were used: (1) the general level of the blood pressure before the final illness and (2) the weight of the heart at necropsy. Data submitted reveals that the incidence of marked coronary disease is the same in cases of mild and severe hypertension. There is no correlation between heart weights and the degree of coronary disease. Patients with hypertension caused by primary renal disease showed less coronary disease than a corresponding group who had no hypertension.

The frequent association of coronary atherosclerosis with hypertension suggests that the two are independent results of a common etiologic factor. An explanation plausible to the authors is offered: Atherosclerosis occurs for unknown reasons in varying amounts and in an irregular manner of distribution. These patients develop coronary disease and may or may not be sufficient to develop symptoms. If the changes occur in certain areas as in the renal, or brain vessels or other known areas, hypertension may result. This could explain coronary disease without hypertension and the high incidence of coronary disease in patients with hypertension.

III. FACTORS IN THE PRODUCTION OF ANGINA PECTORIS

This study was based on forty patients with non-valvular hypertensive heart disease and twenty-one non-valvular heart disease unassociated with hypertension. In the series sixty per cent of the men with angina had hypertension and ninety per cent of the women; there were fifty-two men and nine women. The incidence of congestive failure was seventy-two per cent in each group.

The frequency of marked coronary disease was significantly higher in patients without hypertension, and occlusions had occurred in fifty-five per cent of the cases with hypertension, and ninety per cent of those without hypertension.

In twenty-one cases of non-hypertensive heart disease with angina, nineteen showed occlusions in one or more vessels. On the other hand, in forty cases of angina pectoris associated with hypertensive heart disease eleven cases showed coronary sclerosis in mild degree and twenty-nine showed a marked amount. Only twenty-two of all these showed occlusions in major vessels. Two or more vessels were markedly involved in ninety-five per cent of the patients without hypertension and only thirty-nine per cent with hypertension. Factors other than coronary insufficiency of importance in the production of angina pectoris in hypertensive heart disease are (1) cardiac hypertrophy and (2) increased cardiac work.

OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.
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Treatment of Senile Vulvovaginitis with Estrogenic Ointment. Daniel R. Mishell. *American Journal of Obstetrics and Gynecology*, Vol. 39, p. 796, May, 1940.

Definite regressive changes of the ovaries take place following the menopause. There are concomitant and probably dependent trophic changes in the vagina and vulva. The development of these regressive morphologic changes is not surprising in view of the recognized growth function of the ovarian follicular hormones. These hormones are not only the principal determining factors in the development of the reproductive system, but at the period of menarche and during adult sexual life, they are indispensable for the maintenance of these tissues. During the past two years, we have treated patients with senile vulvovaginitis with local application of estrogenic ointment with striking results. The use of estrogen in the ointment base for local therapy in senile vulvovaginitis has proved of definite value. Amelioration of symptoms occurs after a period of two to three weeks. Systemic action by absorption of the hormone is evidenced by alleviation of such menopausal symptoms as hot flushes. Recurrences may take place, but these respond promptly to further treatment with estrogenic ointment.

OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.
Doctors Building, Nashville

Vitamin Therapy in Ophthalmic Practice. J. Laval. *Archives of Ophthalmology*, May, 1940.

Laval discusses vitamins A, B, C, and D and their uses in ophthalmology. He gives the following summary:

"It is suggested that in cases of the following vitamin deficiencies, it might be theoretically valuable to prescribe the following treatment:

"1. Vitamin A. Prescribe a tablespoonful twice daily in cases of poor dark adaptation, phlyctenular kerato-conjunctivitis, photophobia, and low-grade conjunctivitis in women who are on a slenderizing diet or in cases of other corneal and conjunctival lesions in which the history shows a lack of vitamin A intake.

"2. Vitamin B (B_1 and B_2). Prescribe eight yeast tablets daily of the brewers' yeast type put up by any of the reliable pharmaceutical firms, or the powdered form may be ordered. This is to be used in cases of incipient cataract, in optic neuritis, retrobulbar neuritis, and also in toxic amblyopia.

"3. Vitamin C. Order the juice of at least two large oranges or one grapefruit daily in cases of incipient cataract. (This is plus the brewers' yeast, which is also to be taken daily.) In cases of intraocular hemorrhage order the juice of four lemons daily."

ROENTGENOLOGY

By FRANKLIN B. BOGART, M.D.
Medical Arts Building, Chattanooga

The Roentgenologic Diagnosis of Pneumoconiosis (Silicosis) and Use of the "Electric Eye" to Determine Regional Densities. L. G. Cole and W. G. Cole. *Radiology*, Vol. 33: No. 3, p. 261, September, 1939.

The need of a clearer understanding of silicosis is reviewed and the classification of the roentgen findings based on a pattern approach is discussed. Four groups are suggested instead of the usual three:

1. Accentuated hilar and linear markings.

This group of cases are those usually termed first degree silicosis, and these cases which show only slight changes are difficult to distinguish between silicosis and other conditions causing fibrosis.

2. Nodules—small white spots on a dark background.

These are the nodules described first by the investigators of silicosis in South Africa and have been thought to be pathognomonic for silicosis. The authors consider them pathognomonic of pneumoconiosis, but not of silicosis.

3. Pockmarks—small dark spots surrounded by a light ring.

This group of cases have not been previously recognized or have been grouped with the cases termed nodular in the roentgen ray description.

4. A general nondescript haze, or cloudiness.

A casual inspection of the films in this group of cases often gives a misleading impression as to the clinical condition of the patient. Many of the cases falling in this group are of the acute type with distressing symptoms.

The differential diagnosis is discussed.

In group 1, that is on those cases showing accentuated hilar and linear markings, conditions that must be differentiated are:

1. Pneumonia.

2. Chronic bronchial infection associated with postnasal dripping.

3. Chronic passive congestion from cardiac decompensation.

4. Neoplastic lesions.

5. Bronchiectasis.

In group 2, those cases showing nodular shadows as a prominent part of the roentgen findings, the following conditions must be differentiated:

1. Pulmonary tuberculosis, particularly military tuberculosis.

2. Fungi or yeast infections.

3. Neoplastic metastases.

4. Actinomycosis.

5. Lobar pneumonia, which is usually easily distinguished because it is almost always unilateral.

In group 3, those in which the pockmarkings on the roentgen film are prominent. The location and distribution of the pockmarks are emphasized as important. In lobular pneumonia, the markings are unilateral, and in the central portion of the lungs, which in silicosis, they are bilateral and most commonly found in the peripheral third of the lung.

In group 4, those cases with a general haze, the symmetrical bilateral haze of acute silicosis is a finding hardly seen in other lesions. It may be confused with some types of unresolved pneumonia.

The use of the photometer or "electric eye" is discussed in studying the densities. Its use is advocated when surveying large series of films, because if a film is carefully studied, and the densities carefully charted, the roentgenologist is stimulated to more accurately observe the film.

The importance of associating a roentgenologist in the study of suspected cases of silicosis is emphasized.

The subject of compensation is discussed at length. The conclusion of the authors, based on a careful study of about 200 cases scattered throughout the country and in various industries, is that many chronic cases showing marked X-ray findings have continued to work for fifteen, twenty, or thirty years without dyspnea, cough, or expectoration. When massive areas of collagenization appear on the films, the patient usually shows incapacitating symptoms.

In the acute cases, which develop and terminate fatally within two or three years, and which shows the diffuse general haze on the X-ray films, symptoms are so prominent that the patients are incapacitated early. They should be compensated, but at present do not come within the definition of silicosis.

SURGERY—GENERAL AND ABDOMINAL

By BATTLE MALONE, II, M.D.
1400 Monroe Avenue, Memphis

High Ligation of the Femoral Vein in Amputations of the Lower Extremities. J. Rose Veal, M.D. *Journal of American Medical Association*, 114: 1616, April 27, 1940.

The mortality rate in amputation of the lower limb for vascular gangrene has remained excessively high, and one reason for this is the high incidence of postoperative pulmonary complications. At New Orleans Charity Hospital during a five-year period ending in December, 1933, in 171 amputations for primary vascular gangrene, there was a mortality rate of 39.1 per cent, or sixty-seven deaths. There were twenty-four pulmonary complications among this group. Some of these classified as pneumonia were really due to multiple emboli with secondary pneumonitis, and to substantiate this post-mortem dissections of the stumps frequently showed antemortem clots in the femoral vein.

When a vein is ligated, a clot usually forms in the distal end and extends proximally to a point where a tributary joins the vein. Hence, it is easy for a clot to form and break off into the general circulation and be carried to the lungs. In some femoral veins there are few tributaries of any size entering it; hence, the tendency toward clot formation due to stagnation of the blood. If the clot extends along the vein to a point where the blood is fed by the tributaries entering it, a portion of this clot may break off and form an embolus.

To avoid this sequence of events, the author advocates, and has performed in twenty-eight cases, high ligation of the femoral vein prior to amputation. In these patients there were no pulmonary complications, and the five deaths were in diabetics with gangrene except one who was eighty-seven years old. The ligation is done through an incision in the femoral triangle exposing the femoral vein. The point of ligation advocated by the author is just below the point where the saphenous vein enters the femoral. If ligation is done higher, there is resulting edema of the stump. With this procedure the usual number of pulmonary complications is greatly reduced, thereby lowering the mortality rate for such amputations.

UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.
By G. A. WILLIAMSON, JR., M.D.
Medical Building,* Knoxville

Acute Appendicitis with Abdominal Abscess Involving an Undescended Abdominal Testicle: Report of a Case. Albert Lesser and J. G. Keshin. *Journal of Urology*, May, 1940.

The patient was a white male aged twenty-four. Five weeks before entering the hospital he had an attack of acute, diffuse abdominal pain, associated with nausea and vomiting. This lasted two days and subsided sufficiently for the patient to return to work. One month later, or five days before entering the hospital, he had another attack of abdominal pain associated with nausea, vomiting, and chills. The pain gradually localized in the right lower quadrant.

At the time of admission the temperature was 99.8 degrees, pulse eighty, respiration twenty, white blood cells 9,000 with sixty-five per cent polymorphonuclears. Urinalysis was normal. The patient looked ill. There was a mass in the right lower quadrant and the right testicle was not in the scrotum. A diagnosis of appendiceal abscess was made. The patient was treated conservatively with fluids and sixty grains of sulfanilamide daily for three days. The abdomen was then opened and an abscessed mass was found low down in the right lower quadrant, containing a gangrenous, necrotic appendix wound about a gangrenous testicle. The appendix, testicle, and gangrenous omentum were removed. The pathological report of the specimen was consistent with the gross findings.

The patient was given sixty grains of sulfanila-

mide daily for the first ten postoperative days. Convalescence was slow but uneventful.

This report demonstrates an additional complication to which the presence of an undescended testicle may be subjected.

A careful search of the literature failed to reveal a similar case report.

BOOK REVIEW

The Essential of the Diagnostic Examination. John B. Youmans, M.D., Associate Professor of Medicine, Vanderbilt School of Medicine, Nashville. Published by the Commonwealth Fund, Oxford University Press. Price, \$3.00.

The outstanding feature of the modern teaching of medicine is the proper correlation of history taking, physical examination, and laboratory procedure. The teacher that emphasizes that correlation is sure to do the most to train his students to recognize the value of each in any special problem that presents itself.

Our texts on diagnosis heretofore have covered physical examination to the neglect of laboratory tests, or have given such tests in great detail with little space for history and physical examination.

Doctor Youmans has recognized the value of the training that students receive nowadays and has given us a most practical guide to diagnosis in a broad sense. Doctor Youmans' contact with both undergraduate and graduate students at Vanderbilt has peculiarly fitted him for this task and his text is sure to have wide acceptance. It is an excellent guide to diagnosis.

W. H. W.

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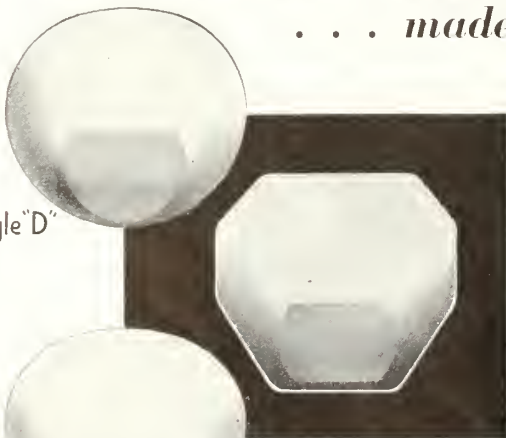
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AN ANALYSIS OF MORTALITY IN ACUTE APPENDICITIS AND APPENDICEAL PERITONITIS*

J. PAUL BAIRD, M.D., Dyersburg

TOWARD the end of the year, 1939, there appeared in the *Journal of the American Medical Association* an editorial entitled, "Challenge of Acute Appendicitis." This challenge has been extended to all of us in the form of an increasing mortality from the early 1900's to an all-time high in the decade just past.

We find among many observers that the death rate has gradually increased. Massachusetts, by Fitz,² 1900 to 1936 (243-490); Virginia, by Horsley,² 1913 to 1935 (6.4 per 100,000 to 10.1); Krech,² reporting figures from six large American cities of 14.3 per 100,000 in 1935 to 17 per 100,000 in 1936; with 16,000 deaths in the United States in 1936.² This is a total of fifty per cent more than all deaths due to pregnancy and childbirth in the same period.² Compared with these figures, the Tennessee rate was 10.6 per 100,000 in 1938.

It is being met by various types of treatment, and the numerous contributions to literature the past ten years have been so voluminous that it would appear that discussion has just about exhausted the subject. The challenge, however, is not directed solely to the supervision and method of treatment, but to faulty public education

and to the manner of interpretation of mortality. When one becomes sufficiently interested to make comparative analysis of mortality figures, one finds material for study of this topic for the following reasons:

1. That end results may be reviewed to determine without difficulty the conclusions of the authors' series, in which all cases of acute appendicitis, with or without perforation, regardless of treatment, should be reported with gross mortality.

2. That mortality may be followed in general trends to ascertain increase or decrease over designated periods.

3. That discussion may be provided for careful consideration of factors that influence this rate.

Since mortality is chiefly dependent upon perforation, analysis reveals that now, as previously, delay is the biggest factor in mortality. It is generally agreed that total mortality in operations for acute nonperforated appendices should be less than one per cent. When we consider that twenty per cent (according to Hoffman) to thirty per cent of cases come to surgical hands ruptured, one cannot be surprised when total mortality figures exceed one per cent. This factor has been repeated so often it is embarrassing in calling attention to the necessity of seeking early consultation. Beside the element of delay from reasons

*Read before the Tennessee State Medical Association, Chattanooga, April 9, 10, 11, 1940.

due to economic factors, self-medication, stubborn refusal of patient to accept competent advice and the atypical cases in which a late diagnosis is made, there are two other factors which may influence total mortality. One of these, which I have noticed the past three years, has assumed proportions worthy of comment. This is a growing misconception of the principles and method of treatment of acute appendicitis and perforations by physicians of years of experience and recent graduates who have come to believe that there is a conservative treatment of acute appendicitis and early perforations by delaying surgery. Whether this is the fault of hasty perusal of literature or faulty nomenclature describing the deferred or conservative method of handling the complicating peritonitis, I do not know.

It is shocking to find a minority opinion prevailing which allows a physician to state, after seeing an acute case in which belief of perforation exists, that this can be treated conservatively at home by ice bag and morphine. The line of reasoning for this misconception is hard to fathom, but one sees it and hears of it in different sections of the country. This potentially dangerous term "conservative" should not be thrown into the literature carelessly as a slogan, for the specificity of its intent is not yet too well defined. There is no doubt that this misconception contributes in a measure to total mortality figures through delay.

A second factor which may influence mortality is the choice of treatment in suspected perforation. Whether a case may be so classified as to place it as one suitable for immediate surgery or to consign it to a delayed, deferred, or absolute conservative method of treatment, is a difficult surgical choice. The classification of a perforation as to the extent of peritonitis, local or general, is subject to the variance of individual opinion and therefore analysis of comparative results must recognize this factor. Without criticism of one method over the other, it is obvious that treating a case by absolute conservatism when immediate sur-

gery could be tolerated is not good management or vice versa.

Because of this factor it should be emphasized that all cases of appendicitis, with or without peritonitis, should have total mortality reported for the group as a whole regardless of method of treatment, and not be reported as simple appendicitis with immediate surgery and appendiceal peritonitis with conservative treatment. The reason is twofold: (1) That overenthusiasm toward conservative trend causes many cases to be placed under this regime from early perforations which are amenable to surgery. (2) That by so doing we may actually increase the potential danger of the factor we strive to avoid; that is, of allowing early peritonitis to become a late or diffuse peritonitis with high mortality in any series.

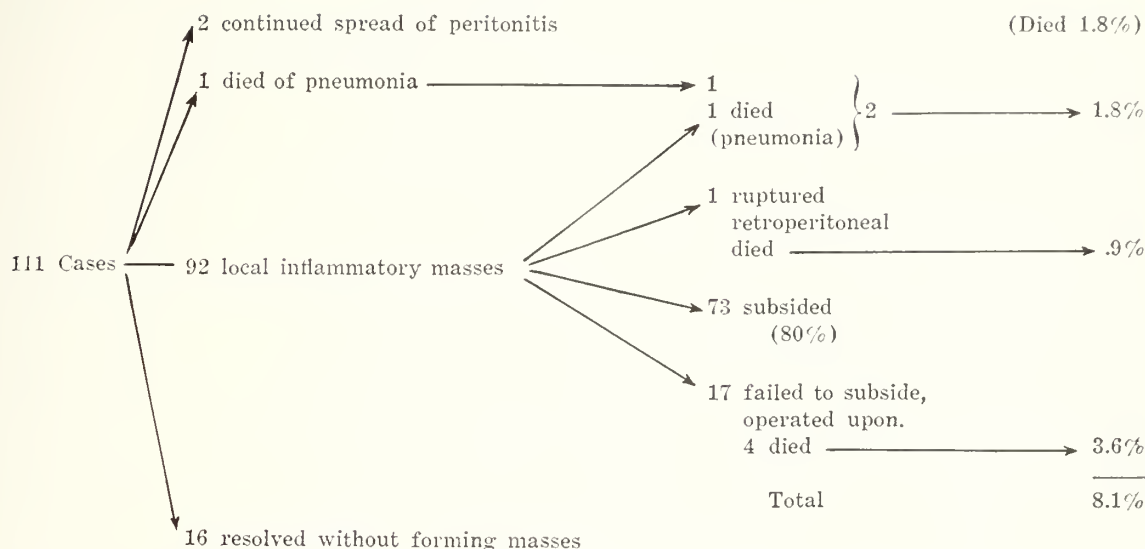
The rationale of treatment by conservative or deferred measures is based upon the principles of allowing patients immunizing reaction to accomplish what it may by localization without disturbance, and combating shock, dehydration, ileus, and toxemia by venoclysis and transfusion and deflating measures such as Wangenstein apparatus. What influences us in our judgment to consider a conservative or deferred treatment? What factors supported by figures give us faith to employ it? On an average from eighty per cent³ to ninety per cent,⁷ graphically shown by Gardner, will form localized abscess. (See Table I.)

About eighty per cent of these will subside under conservative regime. Bower¹ states that the mortality in this group has been reduced from 3.79 per cent to .93 per cent by conservative measures, or, to be exact, by treating as a spreading peritonitis by deferring operation. That this localizing process is well borne out in actuality is shown by numerous observers the past five years who reveal mortality figures in peritonitis reduced by half with a consequent lowering of the total mortality in acute cases. As stated previously, the specificity of outline of delayed, deferred, or absolute conservative treatment has been changed considerable from the original Ochsner or Ochsner-Sherren delayed type of treatment.

TABLE I

C. E. GARDNER

ANALYSIS OF APPENDICEAL PERITONITIS



It may mean a few hours, a few days or absolute delay to an interval period, and in some instances this is not clear in reports.

Basis for consideration of time-honored method for immediate surgery is upon the acceptance that a perforated viscus, as long as it is present, continues to act as an increasing source of contamination within the peritoneal cavity. Hence, its removal as a focus, with least disturbance possible and provision for adequate drainage from this site, has been considered good surgery and still remains the method of choice in many hands. This naturally has to be followed by postoperative care with all of the physiologic aids in treatment employed in conservative measures; ample fluids parenterally, morphine regularly administered, deflation measures by Wangenstein apparatus, and transfusion if necessary. Ochsner,³ who has long advocated conservative measures in diffuse spreading peritonitis, states that at present immediate surgery should be employed by the occasional operator or in doubtful cases. Mock,⁴ in review of many series, gives an average of 4.1 per cent with delayed operative treatment, whereas many figures reveal four per cent or less in immediate surgery.

In Table II, figures from several series reveal that in the management of all acute and perforative cases, regardless of type,

that total mortality varies widely. This extends from 1.68 per cent to 16.4 per cent, and that further breaking down of these series that mortality from associated peritonitis, regardless of type of treatment, varies from forty-five per cent, ranging downward thirty-three per cent, twenty-five per cent, 15.5 per cent, 8.1 per cent, 4.5 per cent to 1.68 per cent. These are quoted not to be judged as picked figures to support an average of mortality, nor as defense or criticism of any particular method of treatment, but to accentuate a diversity of opinion in the estimation of the extent of peritonitis. This should be accentuated, for in the past five years there has been a definite tendency for overwhelming enthusiasm in the employment of conservative or deferred treatment of all appendiceal peritonitis. This diversity of classifying peritonitis leads to the thought that a few cases or many cases of a series will increase the number of perforations treated conservatively with consequent reduction of mortality when they might have withstood immediate surgery as well. To arrive at an analysis of comparative value, I believe, will require careful study over the next five-year period with all cases of acutely inflammatory, gangrenous, and appendiceal peritonitis reported as a total figure with a gross mortality regardless of type of

TABLE II
TABLE OF MORTALITY STATISTICS

AUTHOR	TOTAL	MORTALITY	TOTAL PERFORATION	MORTALITY	METHOD OF TREATMENT
Gardner, C. E. (Duke) Jr. (3)	1080	33.3% Second Series	Local—166 General—40 Local—102 General—9	14 (6.79%) 18 (8.73%) 15.5% 6 (5.4%) 8.1% 3 (2.7%)	Immediate Operation Conservative
Wright, Aaron, Milch, Regan, (5)			45—1935 60—1938	45% 11.7%	Usual immediate Deferred for treatment, shock, deflation, fluids, transfusion
Kelly, F. E. & Watkins, R. M. (6)	2000	16.4%			
Hur (6)			Local periton. Gen. periton.	10% 18.5%	
Davis & Assoc. (6)			?	25.5%	
Reid & Associates (6)			Gen. periton. Local abscess	33.9% 11.4%	
(8) Horsley, J. S., Guy, W. J. S., Jr.	119	Cases with peritonitis		2 (1.68%)	Immediate operation after shock
Thompson, W. H. (Univ. Minn.) (7)	110		110	5 (4.5%)	Absolute conservative measures
Baird, J. P., E. H. & J. Paul, Cochran, J. B.	347	3.74%	27 Gen. 79 52 Local		Immediate operation
McGhee, J. L. (10) 1st series 2nd series	1473 1139	15.6% 5.7%	491 302		Immediate operation Delayed treatment

treatment. This gross mortality could then be corrected for deaths occurring in the first twenty-four or forty-eight hours by either method of treatment and should serve as a fair index for comparison. What is best will have to be subjected to the individual surgeon's analysis of his own figures.

The question may well be asked: Will we be able to show a material reduction in death rate by employment of conservative measures? If more surgeons employ this method, the question will probably be answered after another five-year period. As long as we have from twenty per cent, a very conservative estimate, to thirty per cent of all cases presenting themselves with definite perforations of the appendix, it is evident that mortality figures will still remain high regardless of treatment.

The analysis of our series is taken from records of four of us at Baird-Brewer General Hospital, employing same general principles of treatment the past four years. This series does not include chronic ap-

pendicitis, interval operations, or appendectomies performed in the course of gynecological operations. It represents a consecutive number of cases appearing over a four-year period in a small hospital, in which the challenge of acute appendicitis and its complications has to be met in the course of general surgery. We employ the general method of immediate surgery, with delay only for purpose of stimulation, and fluids to relieve shock and raise blood pressure in order to improve risk of operability, where perforation is thought to be present. This having been satisfied, usually not over four to five hours, patient is operated upon under general anesthetic or spinal, roughly fifty per cent each, through McBurney incision. Appendectomy has been done in all cases except one with as little disturbance as possible to surrounding adhesions and inflammatory exudate and patient closed with drainage tubes which are withdrawn slowly. When actual perforation exists or extensive peritonitis without perforation is

present to such a degree that patient is acutely ill, the postoperative care is routinely intravenous glucose and saline, morphine regularly administered, the Levine tube usually attached to Wangenstein suction apparatus and rectal tube, enemata, and pitressin for flatus.

In this series, twenty-two per cent were perforated by any classification or interpretation of the extent of peritonitis, as this number revealed gross or visible perforation. Of the 347 cases with thirteen deaths, there was a total uncorrected mortality of 3.74 per cent. Of this group, one died unoperated in six hours, one operated died in seven hours, and one operated died in twenty-two hours, an allowable corrected mortality based upon 344 cases with ten deaths, or 2.9 per cent.

SUMMARY AND CONCLUSIONS

An unbiased analysis of mortality figures should reveal:

1. That we may hope for some reduction employing the deferred or delayed treatment in late perforations carried out under strict hospital supervision.

2. Because of contrasting views, that we should have some standardized classification for the extent or type of peritonitis complicating appendicitis for an accuracy in statistical review.

3. That the total series of cases of acute appendicitis and complications should be reported rather than figures expressing the mortality in acute cases immediately treated and cases of peritonitis treated conservatively.

4. That we should make every effort to reduce the number of perforations entering the surgeon's hands. I have never seen a paper dealing with mortality in this disease that did not call for education of the public, and as far as I have been able to determine, this has never been done with any degree of organization except the Philadelphia campaign. I am of the opinion that the society should sponsor through the local societies an intensive public information campaign within the year.

5. That we should clarify by an informative campaign within the profession that

conservative or deferred or delayed treatment is not home management, but an attempt on the part of surgeons to combat the frightfully high mortality from the toxicity and complications of late perforations, or, as McGehee states, an effort to convert the inoperable case into the operable.

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DISCUSSION

DR. LEE K. GIBSON (Johnson City): Mr. President and Gentlemen: Doctor Baird has given us a magnificent paper on the analysis of the mortality in appendicitis. It is really a shame that this paper has not been read to more people because, after all, the management of appendicitis is the piece de résistance of most surgeons. He left very little to discuss, and I am not apologizing for my discussion, but he covered the subject so thoroughly that there is not much more to add.

Certainly the position that appendicitis holds as a cause of death is an unenviable one. From a purely surgical standpoint, only cancer of the stomach and duodenum outranks it as a cause of death. That, of course, should be qualified because a great many cases of appendicitis are operated in the smallest types of our hospitals that are gradually being done away with. Unfortunately, the acute cases of ruptured appendix cannot be brought in every instance to a well-organized hospital. That keeps adding a little to our state mortality risk.

It is true that this acute condition occurs most frequently in adult life when the victim is probably best prepared to withstand surgery. That is not commensurate with the mortality records, however. While it is infrequent in infancy, as the child grows older the frequency increases, and during

this stage of early childhood, the differential diagnosis of acute appendicitis is a little more difficult than it is in an adult. The respiratory infections are often confused with acute appendicitis, and even a seasoned surgeon will doubt his own diagnosis sometimes in a young child. Again, the child is not fortified with the natural defenses to get well that an adult is. The omentum, which is probably the first line of defense against a spreading pus infection within the peritoneum, is nearly absent, just a rudimentary organ in early childhood, and hence so many early cases of bad peritonitis of short interval appendicitis in children.

Again, the aged individual adds a good deal to our mortality list in appendicitis. They are used to feeling badly, and they probably have had several attacks of appendicitis and gotten over them with resulting adhesions, and they lack the pulling sensation of the appendix; they frequently do not vomit, and it is safe to say in about fifteen per cent of them past sixty that have a ruptured appendix and peritonitis the correct diagnosis is made at autopsy.

Chemotherapy will probably help us to reduce our mortality in operative cases of perforated appendicitis. In our hands so far we feel it has been a big help. Unfortunately, appendicitis is one of the rare conditions that cannot be cured by sulfanilamide or X-ray or radium, and it is the surgeon's problem.

The two chief methods, as Doctor Baird has brought out in practically every detail, of dealing with perforated appendicitis are immediate operation and so-called conservative treatment. The so-called conservative methods used are about as bizarre as the so-called early surgical treatments. Every surgeon has a pet method of dealing with a case of peritonitis following perforated appendix, and he conscientiously adopts the method that renders his patient in position to return to his occupation as soon as possible.

The original Ochsner-Sherren treatment as carried out by the men who adhere to it strictly is an elegant form of treatment, certainly not an easy one, and not one that can be carried out in a halfhearted manner. It really takes more organization, cooperation, and work on the part of the surgeon and his assistants than it does possibly to operate.

LeGrand Guerry gives us records of his conservative treatment that are almost hard to believe. If you know him you know that he is meticulous in following out this procedure, and hence has reduced the mortality. However, putting an icecap on the abdomen or telling the patient to wait a day or two doesn't constitute conservative treatment.

We do not believe that either method should be used in every case to the exclusion of the other. Certainly there are definite cases that are saved and are lost by both methods. Every case of appendicitis should be looked upon with the full knowledge of its life-taking potentialities. Unfor-

tunately, young surgeons seeing so many cases done in their internships probably go out thinking appendices are simple. Some of them are.

There is the old subject of cathartics, especially in children, a practice which is still carried on, probably a little less so than formerly. Lord Berkeley Moynihan made a very strong statement one time that he never operated on a case of perforated appendicitis in which an aperient had not been given.

There are several other things that add to the mortality of an appendicitis: faith in an icebag; plausible explanation on the part of the patient that some indiscretion in diet has produced this discomfort in the abdomen; and unwarranted and ungrounded fear of surgery; many surgeons look upon an appendiceal operation lightly; failure to follow either of the methods mentioned with constant vigilant postoperative measures.

DR. H. H. SHOULDERS (Nashville): I do not know whether the discussion I will make now is exactly apropos of what the essayist has said, but it does relate to the mortality from appendicitis.

The peritonitis which occurs as a complication of appendicitis is usually situated in the pelvis. If death occurs, it occurs in the same way as a death from obstruction. The chemical changes in the blood are the same as in obstruction; in fact, the patient actually dies from intestinal obstruction.

Mr. Sampson Handley many years ago described what occurs in these cases and applied to it the term "ileus-duplex." By this term he means that ileus occurs at two points: one in the ileum, the other in the sigmoid. The sigmoid makes a loop back and forth in the bottom of the pelvis; the lower portion of the ileum is also situated in the bottom of the pelvis, and comes up out of the pelvis to join the colon at the ileocecal valve. Therefore, an inflammatory process in the bottom of the pelvis involves these two structures and produces edema and swelling with the result that some degree of obstruction occurs in both these structures. The degree of obstruction is determined, of course, by the amount of the swelling.

If the swelling produces complete obstruction of the bowel at the two points mentioned, the recovery of the case will depend upon relief from the obstruction at both points. To relieve the obstruction in the colon a caecostomy is done. To relieve the obstruction in the ileum, an anastomosis is done between a loop of ileum, above the point of obstruction, and the transverse colon. The anastomosis enables the ileum to drain into the transverse colon and the caecostomy permits the colon to empty, thus relieving both the obstructions.

It is hazardous to manipulate structures in an abdomen, in which acute inflammation is present. The intestines are markedly distended. It is not necessary to seek the point of obstruction. It is advisable to decompress the distended gut before

attempting any manipulation. This decompression can be accomplished in a very simple way: Attach a small needle (twenty gauge) to the suction machine; when a loop of ileum presents, in the operative wound, insert the needle into its lumen in an oblique direction, at a point where the ileum contains gas. It is not necessary to apply Allis clamps to fix the gut. The gas passes through a small needle very rapidly. No fluid content is withdrawn. This procedure is repeated on several loops of ileum until they are placid. The same procedure can then be carried out on the transverse colon. The needle is inserted through the white line. There is no leakage and no bleeding from the needle wound in the bowel.

When the decompression has been accomplished, it then becomes a simple matter to perform the anastomosis and the caecostomy.

I carried out this procedure on a patient about two weeks ago, who, I am sure, would have died had it not been done. He was operated about two weeks before for the removal of a gangrenous appendix situated in the pelvis. He had a pelvic peritonitis, and slowly formed a large inflammatory mass in the pelvis, which could be felt on rectal examination. He also had all the symptoms of complete intestinal obstruction.

Immediately following the operation the vomiting ceased, the distention diminished, and in one week the bowels moved normally.

This patient recovered and is being followed to determine if the ileocolostomy stoma will close. The caecostomy wound closed promptly after the removal of the tube.

DR. CECIL NEWELL (closing): Gentlemen, I want to congratulate Doctor Baird on his excellent paper covering appendicitis in general and many of its particulars. I do want to stress two or three points which he has stressed himself, but which I believe warrant even more emphasizing. The first, of course, is speed of operation in the unruptured, unperforated cases. Operate on them as soon as the diagnosis is definite! In cases where the diagnosis is not definitely established, it is even much better to make a mistake by taking out a normal appendix than to wait for an unruptured case to rupture. I know of nothing worse.

I want to stress the point that Doctor Baird brought out in the treatment of perforated cases; instead of using delayed treatment in these cases that are perforated as the final established treatment, the delay should only be used for transforming an inoperable case into an operable one. I have even operated on a case that was completely moribund where local anesthesia was not necessary. Surgery was delayed only long enough for intravenous therapy to be carried out just previous to the operation. More fluids were administered during the operation and the woman pulled through. More can be done, I am sure, for patients with ruptured appendicitis by operating on them than by delayed treatment. Some of the men who use the conservative treatment get by in some cases, of course. Do not let them fool you; they certainly lose cases, too.

One of the important postoperative procedures which saves a lot of lives, particularly in cases with ruptured appendicitis, is the blood transfusion. A blood transfusion will lessen toxicity and boost the patient up more than intravenous glucose. I do not mean one should give blood transfusions in place of intravenous glucose, but add it to this procedure.

The use of suction at the time of operation; that is, sucking out the pus from the abdomen in generalized peritonitis, will cause much less irritation to the intestines than by mopping or any other means. After operation a great deal can be accomplished by repeated intravenous glucose and saline injections by blood transfusions and by suction.

Of course, drainage is another very important adjunct to surgery, particularly where the appendix has perforated with the development of either local peritonitis or generalized peritonitis.

Following operation, as Doctor Shoulders brought out, what kills the patient with ruptured appendicitis is ileus and obstruction. To combat these, pitressin, I think, definitely plays a very useful role. There is, however, nothing better than the old-time hot turpentine stupes. Of course, in some cases where the obstruction is almost complete or the ileus is extreme, Wangensteen's decompression may be lifesaving.

A NEW AND ORIGINAL DRAINAGE TUBE*

EDWARD T. NEWELL, B.S., M.D., F.A.C.S., Chattanooga

MR. PRESIDENT, Members of the Tennessee State Medical Association, and Guests:

In making this small contribution to the surgical armamentarium of medicine, I wish to submit and describe a drainage tube that I have been using, and some of my colleagues at the clinic and sanitarium have been using with satisfaction for several years. This is the first occasion this tube has been formally presented to the profession for their consideration, and, may I say, approbation.

Before describing the tube and its applicability, I desire to state that I have personally reviewed the literature, books, monographs, reprints, etc., and have been unable to find a description of any similar drainage tube. Further, I have had the librarians of the American Medical Asso-

ciation and the American College of Surgeons send to me all the papers on "drainage tubes" and drainage in general that they have listed in the past two decades, and in these no description of a similar tube could be found. The tube is distinctive in form and easy of application.

Please let it be understood that in this short brochure, I am not discussing "Drainage," per se, either from the biological, physiological, or anatomical standpoint, but rather *drainage* from the mechanical viewpoint. The discussion is further limited to *drainage* of a hollow viscus, such as the gall bladder, urinary bladder, and more especially drainage of the small and large intestines, enterostomy, colostomy, caecostomy, cholecystostomy, and cystostomy.

"When to drain and when *not* to drain"—the biology of drainage—are all absorbing subjects to every surgeon, yet, of equal importance in the successful handling of the

*Read before the Tennessee State Medical Association, Chattanooga, April 9, 10, 11, 1940.

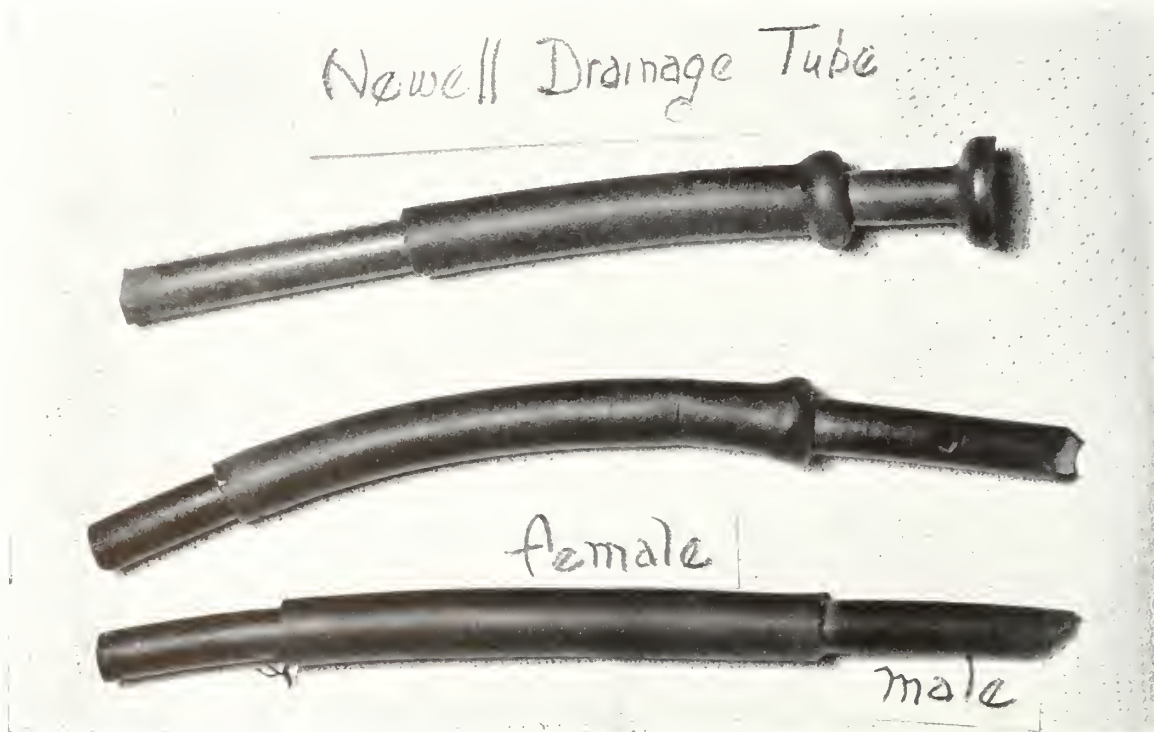


Fig. 1.—Drainage tubes made of ordinary rubber tubing. Note the plain and rounded ends—female tube to be sutured to intestinal wall. Note the linen suture, distal end, to prevent tube from being pulled out.

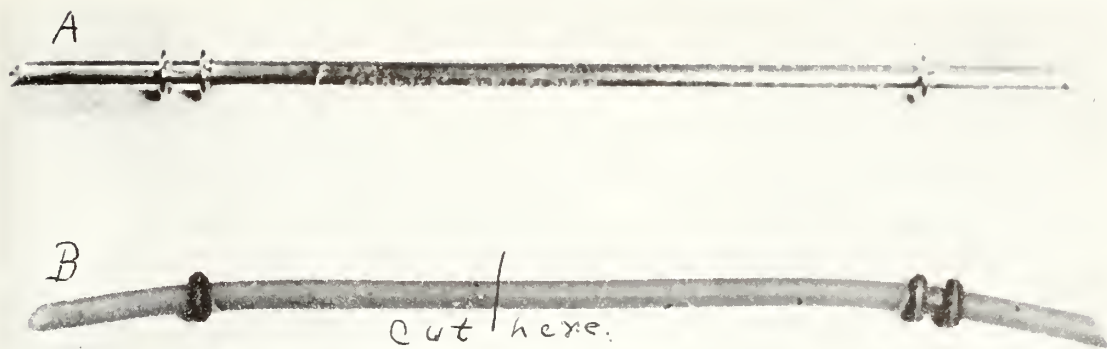


Fig. 2.—(a) Represents steel design for manufacturing tube. (b) Manufactured double tube. Rubber rings are perforated for rapidity of suture and complete sealing. This tube can be used in end-to-end anastomosis.

drainage case, is not alone the selection of the proper instruments, but the proper selection of adequate drainage equipment. The usual soft rubber, semiflexible and semihard rubber tubing, as well as glass and metal drainage tubes, are familiar to all of you.

In every major operation, along with the other instruments, the average surgical nurse has an array of drainage equipment *set apart* on the "service table," which she thinks the surgeon may need during the operation. Upon the correct selection of the drainage material to be used in the individual case, may depend the success of the operation.

The mushroom catheter for bladder drainage, the Brewer's tube for chest drainage, following operations for empyema, and the T-tube in common duct drainage are all *standard* for these conditions. The modified Babcock-Deaver glass drainage tube for certain abdominal drainage cases, the collapsible rubber drainage tube, and the cigarette drain have their place in abdominal drainage, yet I have felt for a long time, that the use of an ordinary rubber tube or catheter in the classical enterostomy, caecostomy, colostomy, or in cholecystostomy for drainage that necessitated the suturing of the tissues or wall of the viscus into the lumen of the drainage tube or catheter, for stabilization, was neither biologically or mechanically correct for the following reasons:

First.—Unless the tube is new, soft, and thick, the sutures will cut through or out, and *undue time* will be consumed. Time is a very important element in all or most of the above procedures.

Second.—Unless the visceral or parietal serosas are closely approximated, the needle holes in the rubber tubing may leak with resultant infection.

Third.—In enterostomy, it is only with wide experience and great dexterity that one can rapidly and properly invert the bowel unless you first apply a purse string suture and have well-trained assistants to prevent soiling of the peritoneum. The Coffey, Witzel, and other methods consume *time* and require more than ordinary surgical skill to properly execute them, and then again the drainage tube may be punctured by the suture and leakage is quite likely to develop. A purse string suture tied too tight, or a very soft drainage tube, invite blockage of the tube.

The ideal drainage tube for a hollow viscus is one that conforms to the following requirements:

- (a) Simple construction;
- (b) That can be readily and easily inserted into the viscus;
- (c) That will not leak at the suture line during and after suture;
- (d) That is large and stable enough to permit free drainage, yet not too large;
- (e) That will *invaginate* the edges of the

viscus, *when* inserted and will maintain invagination;

(f) Finally, one that any surgeon or his surgical nurse can make up in a few minutes from his "stock in trade" prior to or during the operation, and that is applicable to all cases.

The tube I present to you today fulfills the above requirements. Composed of two parts, "a tube within a tube," it is made from ordinary drainage tubing consisting of an outside (female) rubber tube six to eight inches long and an inner longer (male) tube eight to twelve inches long. The tube may be made of any size or length to suit the case in question.

Preparation.—With a hemostat pull the male inner tube through the snug-fitting shorter outer female tube. When this has been done, insert one linen suture through

the proximal end of the tubes. This is to prevent the inner tube from slipping, should undue force or pull be applied to it following its application.

The instrument makers are now marketing a tube for me that has one or two small bands, two to three inches from the ends, and which are laterally perforated. This is the "ready-made" tube and is very efficacious. The added advantage of the manufactured tube is that the rings are perforated and therefore are quicker of application. Especially is this true of the two-ring type tube should you be doing a classical gastrostomy, as you would save considerable time in the operation, and the end results should be much smoother.

Ordinarily, drainage tubes may drain *through* the tube, around the tube, or both ways; but this tube is intended for cases



Fig. 3.—Tube inserted in stomach for permanent gastrostomy. Note suturing of stomach wall to outer female tube—third plication.



Fig. 4.—Tube of previous gastrostomy case clamped off ready for introduction of funnel preparatory to feeding.

that require drainage only through the tube. When the tube is removed, the great majority of the sinuses will heal without further surgery.

This is not a shiny, glaring, intricate *gadget*, but is a drainage tube so simple of construction and application, as not to excite attention, and its real merit and practical value may readily escape evaluation. See illustrations.

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DISCUSSION

DR. L. E. COOLIDGE (Greeneville): Mr. President, I have certainly appreciated seeing this new tube. It is, to my mind, worthy of our careful consideration. I believe it does solve the problems that Dr. Newell has brought out, and I certainly plan to use it. We see these conditions so frequently that he has mentioned, where there is leakage about the tube, or possibly the tube is cut off due to the sutures, so I think we could follow out his directions and use it to advantage in our work.

I cannot add anything to this, as I have had no experience with this tube, but I am sure Doctor Newell should be congratulated on presenting this to us at this time.

DR. EDWARD T. NEWELL (Slide): This is a stricture of the esophagus at the cardiac end. Here is the stomach and the pylorus, and this is the esophagus where the stricture is located. This man had gone about nineteen days, he claimed, without food. He had not had any intravenous medication, but, as you see, he is "skin and bones." We opened him, and there you will see his stomach, pulled out with three Allis forceps, preparatory to opening the stomach for the insertion of the drainage tube.

(Slide) This is simply the suction which you all use in your gastric and abdominal surgery, put through the small opening that we made into the stomach.

(Slide) Fig. 3. This is insertion of the homemade tube. This is the one I prefer. There is a small suture in the proximal end; if you prefer, you can turn the outer tube down and put on a little cement, turn back, and then no suture will be required. The stomach has been invaginated three times.

In doing a gastrostomy that is going to be permanent, as in this case, and where you are going to feed the patient over a period of several months, you want to do the triple invagination. In doing this, you keep shoving the tube down, catching a little higher up, suturing there, and then back

through the stomach wall. You may have two, three, or four reefs; in fact, as many as you desire.

The end of the female tube is down about here (see slide), and this is the third round of suturing into the tube.

Some of you will want to know if the sutured tube will leak. Unless there is very great pressure, it will not leak. If you cement it, it will positively not leak. The manufactured tube will not leak. In not one of the cases in which I have been using it, over a period of several years, has the tube leaked.

(Slide) Fig. 4. Here is the feeding of the patient with the tube inserted. There is a cut-off at this point; note the tube and the upper end for the funnel.

(Slide) Fig. 5. Second case is one—a case of cancer of the sigmoid—in which we did a caecostomy. This drainage tube goes down by the side of the bed into a receptacle. The tube remained in this woman without any trouble for months. The tube was sutured into the bowel, and there was also one stitch into the skin where it remained for many weeks. Over *here*, you see where we brought up the two ends of the resected bowel, which later were united, with satisfactory results.

Motion pictures of the making and application of the tube were not shown for lack of time.

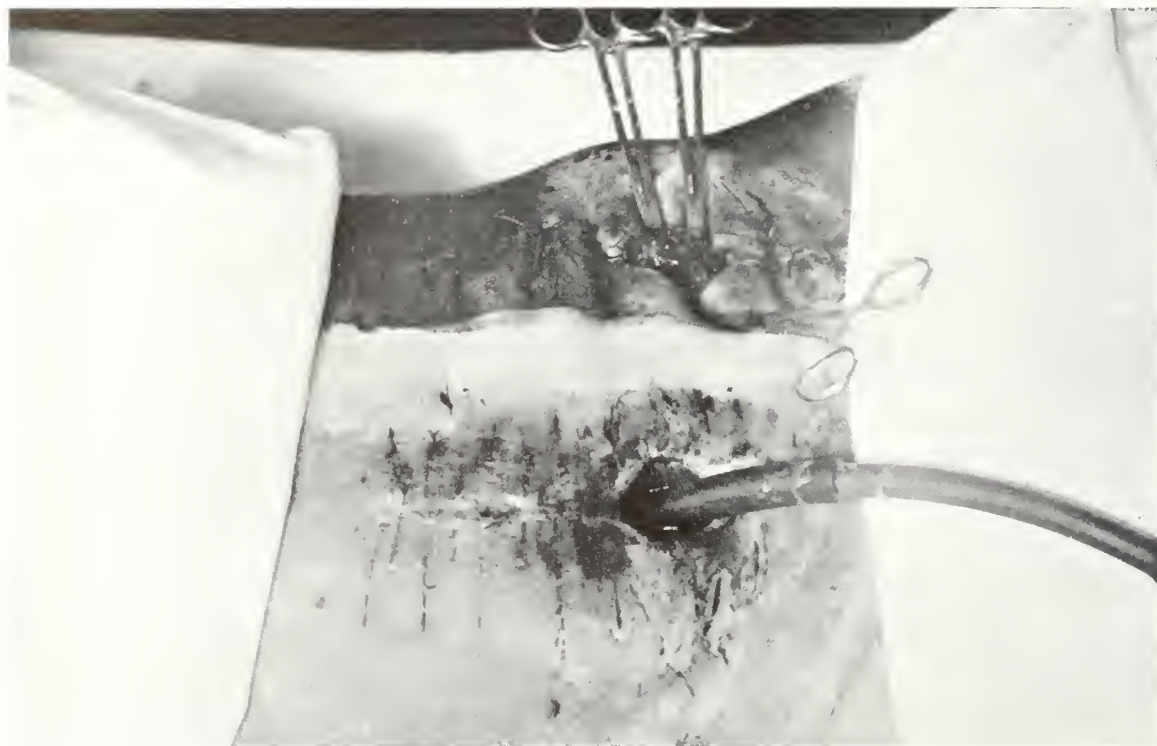


Fig. 5.—Tube in use in caecostomy for cancer of sigmoid. Note resected ends of bowel brought through abdominal wall of opposite side.

PLANNED ECONOMIES AND THE MEDICAL PROFESSION*

J. HOWARD PEW

WHEN a short time ago I was asked to serve on the Board of Jefferson, I selfishly accepted because I knew that I could learn more from Jefferson than Jefferson could learn from me. I suspected that the other members of the Board, conscious of their own contributions, were anxious to find out what—if any—contribution I could produce, and so they ganged up and demanded that I make this address. They laughed in derision when I very properly pointed out how immodest it would be for so new and young a member of the Board to do such a thing, and in the end they overpowered me. I am in the position of the old negro who announced that he had adopted a new philosophy which worked mighty well.

"And what is this new philosophy, Rastus?" he was asked.

"Well, Boss," was the reply, "I avoids de impossible, but I sure cooperates wid de inevitable."

When I undertook this assignment I was far from sure whether I had anything to say that would be appropriate to the occasion, the audience, and the scholastic atmosphere of this great institution. It happened, however, that I had been reading some of the all-too-plentiful propaganda that of late has gone out in favor of governmental planning and control as applied to the socialization of medicine, industry, and enterprise, and had found myself in acute disagreement with the economic planners; so I decided to come before you and present some reasons for my disagreement. In the debate over governmental economic planning I am a convinced supporter of the negative.

Our American system of free enterprise is far more than just a way of doing business. It is a system which at its best comprehends good sportsmanship, gives free

play to the laws of supply and demand and of competition; produces an ever-rising standard of living, develops initiative, character, and discipline, and in many ways goes far toward improving the morale and bettering the lives of our people. When I speak of free enterprise at its best, I mean when it is entirely free—free from monopoly, private or governmental; free from government control or intimidation; free from trade agreements which would control prices and production after the manner of the European cartel system; and after the manner, too, if you please, of the late deceased NRA. For a democratic government to destroy free enterprise, is for that government to destroy itself.

Planning as applied to the other fellow has always been tolerated, and among those groups who do the planning for the other fellow, planning has been downright popular. There are many different kinds of planning: individual planning, group planning, and governmental planning. In individual planning one can always protect himself with his fists, a club, or any other handy weapon. But in governmental planning one must combat the entire armed forces of the nation. There is no surer way of ruining a man than for someone else to plan his life for him. There is no surer way of ruining a nation than for the government to plan for the lives and activities of its people; for a nation can be no greater than are its people.

Now the truth is that great inventions and new ideas for the advancement of the human race have always had to overcome popular prejudices and even organized opposition. Those who have possessed real inventive genius have invariably been regarded as queer chaps, to be viewed with suspicion and carefully watched. All history teaches us that only through the operation of an economy of free enterprise has it been possible to effectuate the release of man's genius.

My quarrel with these economic planners is based on my belief that they know so

*Address by Mr. J. Howard Pew, member of the Board of Trustees of Jefferson Medical College, delivered at the annual dinner of Jefferson's Alumni Association, in the Bellevue-Stratford, Philadelphia, on Thursday, June 6, 1940.

many things that simply are not true. They do their thinking in a complete vacuum and entirely disregard that vast body of experience which proves that they are wrong. Experience and experiment are about the only things on which we can confidently rely. Detailed investigation and scientific experimentation are modern processes that the ancient thinkers would have regarded with scorn; but they have disproved much of what ancient wisdom accepted as fundamental truth. On this point one illustration has always appealed to me.

From the beginning of speculation about physics, it was believed that different weights would fall at speeds in proportion to their weight; a two-pound weight would fall just twice as fast as a one-pound weight. That was accepted as obvious and logical for countless centuries. Then one day Galileo climbed up to the top of the leaning tower of Pisa with a two-pound weight in one hand, a one-pound weight in the other. He dropped them at the same instant and observed that they reached the ground also at the same instant. That was about the beginning of scientific experiment; a first step in the formulation of the laws of motion and of gravitation.

What we need nowadays are some Galileos of economics and sociology to drop a few weights in the right places; to examine and compare the experience of the ages with the panaceas that our economic and social planners are dishing out to us. In the light of that experience it is difficult to give serious attention to those who solemnly argue that poverty is caused by overproduction; that an economy of scarcity will bring prosperity; that if we would only work fewer hours all of us would be better provided for. They urge us to hobble the scientists and to muzzle the inventors lest progress destroy the jobs. Our twentieth century sophists kill off the little pigs in order to insure our supplies of pork. They heap paralyzing tax burdens on industry and enterprise, just when they want industry and enterprise to expand. And they decree that the farmer and all the rest of us shall produce less in order that we shall have more.

Such counsels would turn us backward just when we are ready to go forward at a pace never before dreamed of. Our utilizations of medical science, of electricity, of chemistry, and the catalysts are almost daily opening up new avenues leading to a better and more abundant life. But we should not be too sure, in this troubled world, that we shall ever be permitted to enter this promised land. Let us remember that there are some countries, once leaders in the march of progress, that today are burning up their books, suppressing free thought, regimenting education, and deliberately chaining the race to the wheels of power politics.

In the face of all the experience of the ages, the economic planners would turn us into robots and have government do our thinking for us. We need only to go back a few decades to find repeated demonstrations of the truth that government, among all the agencies created by man, is least competent to direct our economic, our social, and our spiritual life. History is filled with instances as to how government would do our thinking for us. Let me cite an ancient one.

Rome, under Augustus, achieved its climax of prosperity. Augustus was no economic planner; under his regime commerce and trade were given pretty free sway. But most of the later emperors went in strong for planning. The government tried to run practically everything; the senate gradually surrendered most of its powers to the emperor, though the process was not nearly so rapid as was the abdication of congressional authority in this country during the present administration. By the time of the Emperor Diocletian things had become altogether bad. The economic planners had, by favoring the cheaper agriculture of the provinces, well-nigh destroyed the agriculture of Italy. Finally Diocletian took things firmly in hand and inaugurated a new deal. He decreed that half of all the existing vineyards should be destroyed; that a subsidy should be paid for increased production of wheat; that the prices of all goods and services should be rigidly fixed; and that penalties should be imposed for all violations. Sounds a bit familiar, doesn't

it? I suspect that if those old Romans had worn pants instead of togas, a lot of tailors would have been thrown into jail for pressing them too cheaply.

In the end there was overproduction in some directions and famine in others. The destruction of those vineyards caused such a scarcity of wine that it was decreed vineyards should be planted in England, which is about on a par with raising bananas in Iceland. Those decrees of Diocletian just about wrecked the empire. They were responsible for starting Rome on the road to its fall and ushering in that long period in history known as the Dark Ages.

Coming down to more modern times, and still illustrative of how government would do our thinking for us, is the story of the telephone. Within the lifetime of many people not yet old, the first telephone was installed on the White House desk of General Grant. After he had talked into his end of the wire and listened to the answering voice coming in from the other end until he was thoroughly satisfied that the thing really would work, he leaned back in his chair and said: "Yes, it is truly remarkable, but who in the world would ever want to use one of them?" Now, General Grant was quite a man. He won a great war and was twice president. And yet I submit that that incident justifies the gravest doubts about the vision of any economic planning board which he might have appointed; and as President, according to the theories of the present-day planners, he would have had to appoint just such a board.

The story of the submarine illustrates governmental attitude toward invention. When Robert Fulton was living in Paris, he built a submarine and successfully navigated it on the River Seine. At that time Napoleon was projecting an invasion of England, to which, of course, British sea power appeared as the chief obstacle. Fulton tried to convince Napoleon that his submarine would assuredly neutralize such British sea power. Now Napoleon was one of the greatest economic planners of all times, and his power and authority were absolute; but he just could not see the sub-

marine, badly as he needed it. Not until a round century later was any maritime power willing to try out the submarine as an arm of its naval establishment.

In the summer and fall of 1787, the Constitutional Convention sat in Philadelphia. That same summer John Fitch, also in Philadelphia, built the first steamboat. Now it is pretty generally accepted that the Constitutional Convention brought together about the wisest body of men that ever undertook a big job. They laid the foundation for the world's greatest nation. So John Fitch, when his boat was ready, invited the delegates of that convention to come down to the Delaware water front and see his boat start off. The convention was adjourned for the purpose and many of its members accepted the invitation; but George Washington, president of the convention, foremost among the nation's founders, and ardent advocate of developing our waterways, regarded the experiment as too illusive to justify the honor of his presence; so when the convention adjourned he drove off to dine with a friend. The truth is that neither George Washington, Benjamin Franklin, nor any of those wise men in that convention could possibly have imagined the consequences of that invention. And if not they, where could be found the economic planners capable of visioning them?

Now I should like to speculate with you for a moment as to what might have been the attitude of a National Economic Planning Board back in the year 1900, if one had existed at that time, toward the automobile and oil industries of that day. There were then in operation in this country 8,000 automobiles, consuming 80,000 barrels of gasoline in a year. That is just about enough gasoline to keep the cars of today in operation for one hour and a half. Let us imagine Mr. Ford, with his great vision of the automobile's future, appearing before that planning board and asking that in its program for the next two or three decades it provide a few billions of dollars of capital, along with the necessary labor and material, for his industry. The board would have recognized in Mr. Ford a mild lunatic. They would have asked where he expected to get

the gasoline for all those cars, and would have pointed out that neither the gasoline nor the crude oil from which to make it was anywhere in sight and they would have rejected Mr. Ford's request. A sophisticated public would have laughed at Ford when the board set down genius as insanity and inventive ability as lunacy; and that would have ended all foolish talk about horseless carriages and flying machines.

But fortunately for those twenty-five millions of families in this country who today derive pleasure and satisfaction from the operation of their cars, there was no such board in the year 1900; and so Mr. Ford, not worrying about where his gasoline was coming from, went right ahead building more cars and better cars until presently he was turning out over a million cars in a year.

And fortunately, too, for the oil industry, there was no such board, so that industry, too, went right ahead drilling more wells and deeper wells, and sometimes finding oil. They brought technology to their assistance in the form of geology and geophysics, and by their aid discovered new oil fields. And so the oil industry, doing each year things which would have been impossible the year before, was always able to keep just a step ahead of the thirst for gasoline of those multiplying millions of automobiles.

Just one more instance. When it was proposed, almost exactly a century ago, to build the first railroad into Philadelphia, the protests were so vehement as to verge on riot. If our economic planning authorities had weakly yielded to the proposal of the railroad, they would have been in grave danger of tar and feathers. But they would not have yielded. They would have known that railroads would scare the hens out of laying, the cows out of letting down their milk, the stagecoaches from running, and in every way would have forwarded the most malevolent designs of the devil himself.

I must tell you what I consider the richest story of them all. I ran across this in a report put out by the Patent Office Society. About the middle of last century it was

proposed in Washington to erect a new building to house the Patent Office. The Congressional Committee called in Mr. Ellsworth, who was then United States Commissioner of Patents, to ask his advice. Commissioner Ellsworth counseled against too large or expensive a building because invention had just about reached its limit. He related the astounding advances that had been made in the mechanical arts during his lifetime, and predicted a cessation of activity in the field of invention. There just wasn't anything much left to invent! That statement moved me to make a little investigation of my own, and I found that up until that time there had been taken out some 3,327 patents, and that since that time over two millions of patents had been granted. Just a little increase of some 60,000 per cent. So much for that one government official who undoubtedly would have been a member of the National Economic Planning Board if one had existed at that time.

But Commissioner Ellsworth was not so illiberal as are most of our present-day economic theorists and governmental planners. He did not believe there could be many more inventions, but at any rate he did not propose to suppress them when they did come along.

If, speaking as a businessman, my observations thus far have been directed primarily against restrictions and controls upon business, I am sure that you will realize that in no phase of human activity has progress been so dependent upon intellectual freedom and individual initiative as in your profession of medicine. Let me cite just one such instance. One hundred thirty years ago Ephraim McDowell was a practicing physician at Danville, Kentucky, then a small hamlet out in the wilderness. A few days before Christmas he was summoned to come sixty miles to see a patient, a Mrs. Crawford. The local doctor had told her that she was pregnant, but after ten or eleven months had passed her condition became so alarming that Doctor McDowell was called in consultation. He diagnosed the case as ovarian tumor. No surgeon had ever dared operate in such a case

because it was popularly believed that any contact of the outside atmosphere with the interior of the abdominal cavity meant certain death.

But Doctor McDowell had long believed such an operation possible and induced Mrs. Crawford to let him do it. The operation had to be performed at his home, where he had his surgical appliances; and so Mrs. Crawford accompanied him on horseback the sixty miles back to Danville, suffering excruciating agony at every step. When the village learned that his unheard-of operation was to be performed, feeling ran high against Doctor McDowell. The people believed the operation should be stopped either by law or if necessary by a mob. But Doctor McDowell was undaunted. Even though he knew that the operation might result in the death of his patient, and certain death to him if the patient died, because he would be regarded as a murderer, nevertheless he was prepared to take the risk.

The operation was performed on Christmas morning, and after the services at the local church were over the angry people gathered in front of the doctor's house and, with a rope around a tree, were prepared to hang him just as soon as the patient died; and then, becoming impatient, they tried to break into the house, but were restrained by the sheriff.

This was before the development of anesthesia, and legend has it that Mrs. Crawford sang hymns to drown out the pain while the doctor worked. Anyhow, despite the screaming of his patient on the inside and the howling of the mob on the outside, Doctor McDowell performed the first abdominal operation of its kind in the history of medicine. Mrs. Crawford not only survived the operation, but her recovery was complete, and she lived to be over eighty years of age.

If the socialization of medicine had been in force at that time, what do you suppose would have been the attitude of the Medical Planning Board toward such an operation? And if throughout the world Medical Planning Boards had been in force during these last 130 years, what do you suppose would have been the status of medicine today? I suspect it would have been just what it was

before Doctor McDowell performed this amazing operation. Now you may think such an observation on my part a bit rash. I only want to submit that there was little or no progress during all those centuries when the peoples of the world lived under various schemes of government controls and economic planning.

I might go on indefinitely citing instances of the peculiar inability of government to provide the leadership and inspiration for the genius of mankind, but time does not permit.

There is no limit to mankind's capacity to consume, nor to the resources from which demands may be met. Our only concern is to develop institutions which will permit the release of man's genius. We have made a good beginning; it is for us to preserve and protect all that we have thus far achieved, and to be sure that in the time to come yet more shall be added unto it.

And now, in conclusion, I appeal to you men of the medical profession to come to the defense of our American system of free enterprise and equal opportunity, for the truth is that no economic planning authority could possibly have foreseen, planned, plotted, and organized such an amazing spectacle of scientific, medical, and industrial progress as the world has witnessed right here in America during this last century. No trust or combination, private or governmental, could have accomplished it. It could have been achieved only under conditions where there was wide-open opportunity for all the genius, inventive ability, organizing capacity, and managerial skill of a great people. Nobody must be barred, no invention rejected, no idea untried; everyone must have his chance.

To each of us is assigned a part to play in the great drama of life, and we can only play our parts with the greatest measure of perfection as free, unhampered individuals. Surely it is not thinkable that in the light which shows through this twentieth century, a great progressive people will be beguiled into turning back into the ways of controlled economies and dictated social programs.

You men of medicine and surgery have made many of the largest contributions to the welfare of humanity; you want to do your share of the world's work, but you have another and greater ambition. You want to create something which, when it is handed down to posterity, will make this world of ours just a little better and just a little finer place in which to live. You want to be filled with the vision of the bridgebuilder:

An old man who, traveling a lone highway,
Came at evening cold and gray
To a chasm deep and wide,
Through which there flowed a sullen tide.
The old man crossed in the twilight dim,
For the sullen stream held no fear for him.
He turned when he reached the other side
And built a bridge to span the tide.

"Old man!" cried a fellow pilgrim near,
"Why waste your time on your building
here;

Your journey will end with the ending day,
And you never again will pass this way;
You have crossed the chasm deep and wide,
Why build a bridge at eventide?"

The builder raised his old gray head,
"Good friend, on the path I have come,"
he said,

"There followeth after me today
A youth whose feet will pass this way.
This stream which has meant naught to me,
To that fair-haired boy may a pitfall be:
He, too, must cross in the twilight dim;
Good friend, I am building this bridge for
him."

CHRONIC TRIGONITIS: ITS EFFECT ON THE TRIGONAL EPITHELIUM*

H. L. DOUGLASS, M.D., Nashville

SEVERAL months ago I had occasion to make a cystoscopic examination in the case of a woman who had suffered for many years with symptoms of severe cystitis. All previous examinations had been negative and the urine was normal. In the course of this examination I inspected the internal orifice with a retroverted lens, and found a lesion on the trigone, which, to me, was unique. (Fig. 1.) From that time forward it has been my routine to examine the neck of the bladder by retrospection, and in so doing I have observed inflammatory changes which were confined to the trigone and internal orifice in a majority of women who complain of bladder symptoms. In fifty per cent of these cases the epithelial changes (swelling and hyperplasia), shown in Fig. 1, were present, in varying but appreciable amounts, on the inflamed surface of the trigone. This phenomenon, therefore, seems to be nothing more than the response of the trigonal epithelium to some form of irritation, and consideration should also be given to other associated tissue changes in this locality. The purpose of this paper is to report the symptoms, cystoscopic findings, possible causative factors, and the results of medical treatment in a series of seventy-six patients who had inflammatory changes localized to the trigone and internal orifice.

A partial review of the literature discloses that lesions similar to that illustrated in Fig. 1 have long been known and described by both gynecologists and urologists. Its importance, in my opinion, lies in the fact that it is a frequently unrecognized cellular change in a prevalent disease of the trigone whose etiology is little understood and whose treatment is unsatisfactory.

SYMPTOMATOLOGY

The disease may occur at any time in life. In this group the ages of onset varied between childhood and age sixty-six, the

average age being thirty-seven years. The earliest recollections of a few patients relate to urinary dysfunction such as bed-wetting, wetting their clothes, and the fact that they required special privileges at school to meet the demands of urgency and frequency.

The onset was gradual in sixty-eight per cent of this group. The disease was extremely chronic, and at the time of the first consultation had been in progress for periods ranging from a few hours to forty years and averaged eight years. Its course was characterized by repeated exacerbations and remissions in symptoms. Both exacerbations and remissions at times came suddenly and without apparent cause.

The symptoms of this disease may be divided into three groups. The first group contains those symptoms which are referable to inflammation in the bladder. The chief symptoms in group two are abdominal or lumbar pain and tenderness, which are often due to disease in the upper urinary tract. The third group is made up of sundry constitutional manifestations.

Group I.—The symptoms in this group and their frequency are listed in table No. 1.

TABLE NO. 1

<i>Symptoms</i>	<i>No. of Patients Affected</i> <i>Per Cent</i>
Frequency -----	85
Urgency -----	81
Nocturia -----	77
Dysuria -----	74
Bladder Fullness -----	70
Incontinence -----	22
Strangury -----	21
Difficulty -----	15
Haematuria -----	15

The above symptoms need no further comment than to say that nocturia is usually mild, even in the patient with pronounced frequency by day.

The urine is often diminished in amount during a severe exacerbation of bladder symptoms.

Group II.—This group of symptoms is important for two reasons: first, it includes seventy-three per cent of all patients, and secondly, abdominal pain in the presence

*Read before the Tennessee State Medical Association, Chattanooga, April 9, 10, 11, 1940.

of normal urine may lead to errors in diagnosis.

Abdominal pain was on the right side in fifty per cent, the left side in twenty per cent, and bilateral in sixteen per cent. In the remainder, pain was in the midline, around the navel, or in the hypogastrium, or it was too vague to be listed. As a matter of fact, the pain in most cases was bilateral, but was so much more severe and constant on one side that the patient only gave a history of unilateral attacks. In most of the cases the pain was dull, aching in character and located at some point along the course of the ureter or in the kidney region. It was frequently referred to the hip, back, down the leg, and to the inner surface of the thigh. The seat of the pain was tender on pressure. Occasionally the pain was severe and indistinguishable from renal colic. In many of these cases no cause was found for the attacks after careful studies had been made. Examinations of two patients during the severe seizures showed that renal function was markedly diminished or absent on the side involved. Subsequent examinations of these patients two to three weeks after recovery revealed restoration of function.

Group III.—The constitutional symptoms are many, varied, and bizarre. They include malaise, mild nausea, sick headaches, fever, dizzy spells, spots before the eyes, attacks of blindness, tendency to lose consciousness, numbness of the tongue or of the extremities, neuritis, aching down the legs, coccygodynia, soreness and stiffness of the joints, swelling of the feet and hands, and a dislike for water. Some or all of this train of symptoms, which has so often in the past been considered the signs of neuritis, are commonly complained of by patients in whom this lesion is known to be present.

URINALYSIS

The urine was usually limpid, with a specific gravity of 1.008 or less, and without albumen or sugar. Microscopically, as a rule, it was normal except for large numbers of epithelial cells. These epithelial cells were not always present in the urine of the same patient, but seemed to come

in showers. Pus may be present at times, but there is no relationship between it and urinary symptoms. Blood cells occur in varying amounts, but are frequently absent altogether.

A few patients stated that their urine at times had a foul odor.

It was sometimes observed that concentrated or scanty urine contained albumen, a few pus cells, an occasional red blood cell and casts. Later on when the urine became limpid and more abundant, these findings would disappear. This evidence of cortical irritation of the kidney was observed either constantly or at times in fifteen per cent of these patients. In two patients ureteral catheterization proved that these abnormal constituents were present only in the urine of one kidney.

CYSTOSCOPIC FINDINGS

The external genitalia were not remarkable. The deep urethra was at times hypersensitive. Residual urine was infrequently present in small quantities. Bladder capacity was usually normal and only at times slightly diminished.

The visible lesions were confined to the trigone, involving at times the ureteral meati and the internal orifice. The disease is thus restricted to tissue of mesodermal origin. In certain cases one gets the impression that the lesion had advanced from the internal orifice along the surface of the trigone toward the ureteral meati or vice versa. (Fig. 2.)

The appearance of the trigone varies. It is frequently red, edematous, and more or less covered by a delicate white granular film. The granules are more prominent around the periphery, where the border of the film is irregular in contour and slightly elevated. Histologically this film is nothing more than swelling and hyperplasia of the surface epithelium. These hyperplastic cells are translucent, and as the angle between the line of vision and their surface plane is decreased, this cellular change becomes less obvious to the observer. At times epithelial hyperplasia is the only visible change present on the trigone. (Fig. 3.) In such instances the lesion presents a

most striking appearance which is sometimes best seen through the retroverted lens.

Two characteristic phenomena are sometimes observed during cystoscopy. First, the trigone may present an abnormally white or a red granular surface. Secondly, if the trigone is observed, while water is flowing into the bladder, a thin film or scum may be seen to leave the surface of the trigone and float upward in the current.

The periodic presence of large numbers of epithelial cells in the urine indicates that the hyperplastic cells are at times desquamated.

In men the disease is usually confined to the internal orifice and prostatic urethra as far as and including the verumontanum. The anterior third of the trigone was involved in only one of the eleven cases included in this report.

The upper urinary tract was examined by urography in twenty-six patients because of abdominal or lumbar pain. Three patients had intravenous pyelograms, twenty-two retrograde pyelograms, and one patient was examined by both methods. Nineteen of these twenty-six patients had varying degrees of pelvic and ureteral dilatation on the diseased side.

These findings suggest that transitory edema similar to that which occurs on the trigone may involve the ureter and produce varying degrees of stasis in the upper urinary tract.

There were two patients in this group, both women, who, without previous manifestation of urinary disease, were suddenly seized with violent symptoms of cystitis. I made a cystoscopic study of each within twenty-four hours following the onset, and in both instances the findings were the same. The trigone and posterior urethra were bright red and swollen. On this background of hyperaemia and edema were tiny elevated patches which were white and granular. Beyond the boundaries of the trigone, the entire mucous membrane of the bladder was spotted with purplish red petechial splotches. Small clots which were adherent to a few petechiae indicated that the blood had broken through the mucosal epithelium into the bladder cavity. One

patient had noticed gross haematuria and the other had a large amount of microscopic blood in the urine.

Probably the first and principal pathologic change occurs in the blood vessels; that is, hyperaemia, congestion, edema, and at times hemorrhage.

Hyperplasia of the trigonal epithelium develops more gradually and, once established, it frequently persists after all symptoms have disappeared. For this reason it may be present in patients who, for the moment, have no urinary disturbance. It stands in contrast to hyperaemia and edema which seem to fluctuate with symptoms. Extensive hyperplasia of the trigonal epithelium was observed in two women who had suffered repeated attacks of right-sided abdominal pain, but who did not recall ever having had bladder symptoms.

ETIOLOGY

The symptoms of this disease frequently follows an unusual or trying experience.

In this series nine patients stated that the onset of symptoms came following an operation. Two of these nine had to be catheterized for postoperative retention of urine. Six developed symptoms during some unrelated illness, two during pregnancy, two following labor, and one following an injury. Four stated that certain foods were responsible for their urinary symptoms, and that they had been able to partially control the disease by eliminating those foods from their diet. Many others gave a history of food allergy, but did not consider it as in any way related to their urinary symptoms.

Duke,¹ 1922, reported his experience in testing for specific hypersensitiveness in obscure medical cases, and stated his belief that "bladder allergy is not a rare cause of bladder trouble, but is a relatively common one, particularly in the group of patients with bladder disturbance who exhibit little or no pathology in the urinary tract to account for it."

Miller and Uhle,² 1939, reported two cases of renal colic, in which there was no stone, and in which the urological examinations were negative. In one patient the

pain was associated with urticaria. Morphine failed to relieve the symptoms. Adrenalin given hypodermatically immediately relieved both the pain and the urticaria. In the second case, morphine again failed to stop the pain. Adrenalin given hypodermatically was followed by prompt relief.

The fact remains that urinary symptoms frequently occur in patients with normal urine in whom trigonitis is the only demonstrable lesion. For this reason Mann's³ theory, that an abnormal state of the urine may irritate the urinary tract, must be considered.

Mathews¹ states that, in the oxidation of the amino acids, "a very important change is the splitting off of carbon dioxide by the action of so-called carboxylase bacteria. This may happen either before or after deamination. If it happens before deamination, amines of a highly toxic character are produced." Histamine is known to produce symptoms when it occurs in the blood in excessive amounts.

The treatment of this disease, which is discussed in the following chapter, was based on this view. Whether in a given case the toxic material may arise from the indiscriminate action of bacteria on protein in general or from an individual idiosyncrasy to a limited group of highly specific proteins is not clear.

TREATMENT

Exacerbations in the course of this disease may be severe and demand immediate relief. In such instances symptoms may be frequently controlled by the use of adrenalin or calcium chloride. Given intravenously, calcium chloride, though effective at first, has a tendency to lose its therapeutic value after five or six consecutive administrations.

Calcium in combination with viosterol was given orally to thirty-eight patients over varying periods of time. Thirty-one were improved between ten and seventy-five per cent. The drug acted slowly and maximum improvement occurred after five to seven days. When calcium was discon-

tinued its beneficial effects were usually lost within four or five days.

An effort was made in thirty-two cases to relieve urinary symptoms by minimizing the absorption of putrefactive products from the intestinal tract. Sodium ricinoleate in ten- to fifteen-grain doses (two to three five-grain soricin capsules) were given before meals to detoxify the colon, and five to ten grains of bile salts with vitamins A and D (one to two Adbile capsules) after meals to aid and hasten digestion. In this group five patients were unable to continue this medication after the first few doses because of unfavorable reactions, principally nausea, abdominal pain, and diarrhea. In one case the gastrointestinal upset was accompanied by an exacerbation in bladder symptoms. Twenty-seven patients had no unfavorable reaction to this therapy, and after continuing it from one to three months, eighteen (sixty-six per cent) were improved in every way from twenty-five to ninety per cent, and nine (thirty-three per cent) had experienced no relief of symptoms. A few among those improved have experienced recurrences of symptoms since the treatment was discontinued.

The results of these therapeutic measures are chiefly of interest in so far as they support the theory that a toxic protein substance is the etiological agent in this disease.

In conclusion, I want to thank Miss Wilkes and Miss Baker of the Department of Illustration, Vanderbilt Hospital, for the drawings presented in this paper.

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DISCUSSION

DR. BURNETT WRIGHT (Nashville): Mr. Chairman and Gentlemen: Several months ago when Doctor Douglass asked me to see one of his early cases, I think about the fourth or fifth one



FIGURE 1

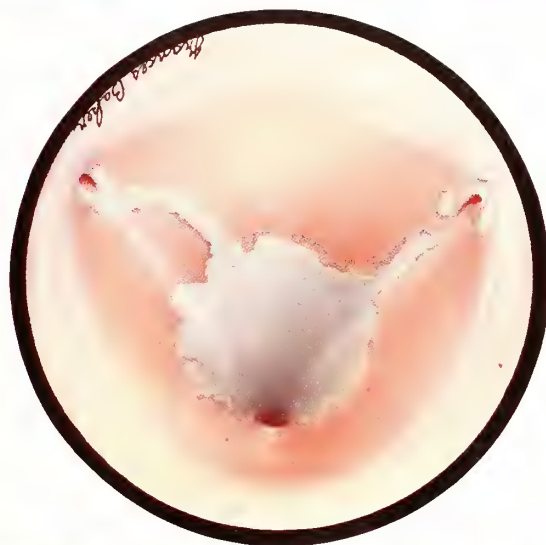


FIGURE 2

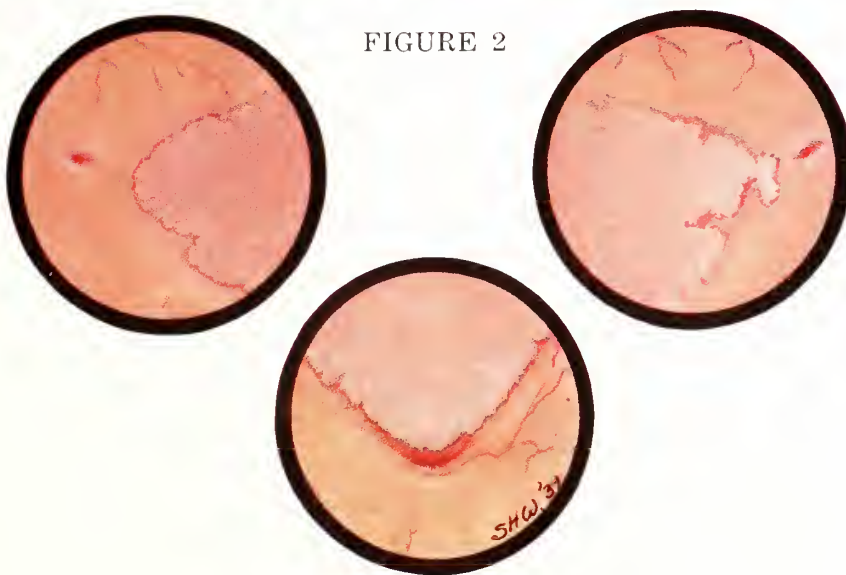


FIGURE 3

Original Drawings Made Directly from Patients

in this series, we were agreed that he was undoubtedly dealing with a lesion that was more or less familiar to all urologists and had been described by many medical writers under the terms of pseudomembranous or pseudodiphtheritic cystitis. At that time I was struck with the ease and the beauty of the visualization with the retrograde lens or, as Doctor Douglass prefers to call it, the retroverted lens. As time went on and I began to use this lens routinely in the examination of female bladders, I became convinced that unquestionably in the past we had overlooked many cases of pseudomembranous cystitis because of imperfect visualization with either the right angle or the fore oblique lens. The fact that he has been able to collect so many cases in such a short time would indicate to us that either this thing is tremendously frequent, much more so than any of us had ever suspected before, or that he must have inadvertently included in this group some of the many ills to which the female bladder is heir and which he incidentally has enumerated in his history and symptomatology. Now we know that the female bladder is sensitive to all sorts of extraneous influences, much more so than the male bladder, and there are few women who at some time or another in their lives do not have disturbances in the urinary function. Painful, frequent urination is a common complaint.

Doctor Douglass and I have had many conversations about this condition—we talk about it almost every day—and I cannot dismiss the idea from my mind that there is possibly some irritant in the urine of a great many people that is responsible for this picture. The distribution and location of the epithelial proliferation, and that is what it is, according to his biopsy section, is quite suggestive.

One idea that occurred to me recently was when I saw a stain in a wash basin caused by the water that had come out of rusty pipes due to bad plumbing, and the distribution of that stain on the wash basin was quite analogous to this extension of the epithelial proliferation up to each ureter represented by the water faucet, and concentrated around the outlet represented by the internal urethral orifice. It would appear, then, that perhaps by reason of the upright posture and the increased concentration of some toxin or virus or what not, there may be, undoubtedly are, instances where an irritant in the urine from the kidneys above can cause undue epithelial proliferation on the trigone and at the neck of the bladder. On the other hand, this certainly does not explain the unilateral cases which he himself described. If he is dealing, as we must up to this point admit, with the well-known pseudomembranous cystitis, then he is finding more than anybody else because he has learned to look for them with a retrograde lens, and I think that is the most important contribution he has made on this subject. His own biopsy sections would indicate that this is a metaplasia, a heterotopic metaplasia, if one cares to describe it that way, some-

thing that is occurring in a location where it should not occur, and it is just a few steps beneath the well-known leukoplakia and epithelioma. It is a rather paradoxical situation because it is an ectodermal pathological process occurring in tissue that is largely mesodermal in origin. The bladder is both entodermal and mesodermal, while the kidney pelvis and ureter are entirely mesodermal in origin.

Unfortunately, we have no way of knowing whether this proliferation extends up the ureter except to say that well-defined and well-proven cases of leukoplakia of the kidney pelvis have been commonly found. Another thing that would interest us in this connection is whether or not keratin is present. I am not sure that Doctor Douglass has determined that. We know that epithelial proliferation on the skin, cornification, results in an increased amount of keratin, and it would be most interesting to know if we find keratin in tissue removed from lesions of this sort.

We must assume that this then, according to my conception of it, is a defensive reaction on the part of the epithelium of the trigone and the bladder neck to a long-continued irritant. There is unquestionably an increased number of epithelial cells in the urine of these people; I have seen them. Then there is one other thing that has suggested itself, and Doctor Youmans' paper intimated it today, that it may possibly be an avitaminosis. For my own amusement, I have been asking myself why should an avitaminosis affect only women, or to a large extent women, and unless it is the almost universal dread that women have of getting fat that makes them cut down on certain fat-producing foods, I have no reasonable explanation to make.

Doctor Douglass' efforts have been very interesting. He is earnest and honest, and his observations have been accurate, and he is seeing what he says he sees. I am convinced that if urologists in general will use the retrograde lens routinely they will find a great many more cases of this lesion than has been the case in the past.

I have one patient who says definitely and positively that she has been almost completely relieved by the use of sorcin and animal bile, which is Doctor Douglass' suggestion as a therapeutic measure, and she has had little or no local treatment.

We have all seen women with irritable bladders, in whom complete, thorough examinations, including investigation of the upper urinary tract, failed to reveal any definite pathology. The majority of those women can be cured, or at least alleviated of their suffering, by such things as urethral dilatation, instillation of silver nitrate, followed by gomenol or other soothing drugs. Stevens of San Francisco, who has probably examined more female bladders than any other man in the world, says that about forty-five per cent of all women he has examined show some form of urethral stenosis or stricture, and he includes in that group those cases who have abnormally small urethral meatuses.

We must not fly off at a tangent and be too enthusiastic and include in the classification of a single lesion, as far as its etiology and symptomatology are concerned, all the ills to which the very unstable female bladder is subject.

DR. TOM R. BARRY (Knoxville): Mr. Chairman, a few minutes before Doctor Douglass read his paper we were upstairs in my room discussing this matter, and I asked him how many of these he had seen and he told me seventy-six, as I remember, in the past year. It was just astounding to me. We talked a little further and I found out that he was talking about the same case under different nomenclature that I had in mind. I think the doctor is to be congratulated on this original work he has done. He has done a lot of it, but I think he is unduly excited about this pseudomembranous cystitis. I believe that the nomenclature of follicular urethritis and stricture and trigonitis would probably explain most of these cases.

As to the etiology, I think it is a little far-fetched to think that this is a descending infection for several reasons, the main one being that all of them, or practically all of them, are completely relieved by dilating the urethra. If it were a descending infection of any kind I cannot see what good effect dilating the urethra would have. The fact that this follows the course and direction of Bell's muscles from the urethra to the ureteral orifice is another indication to me that it originates in the urethra, and is the same thing that we have been talking about for many years—urethral stricture in women—which is by far the most common urologic condition we ever see.

DR. G. MADISON ROBERTS (Chattanooga): I am glad that Doctor Douglass has brought up the question of infections in the female urethra and trigone, and while it was not my intention to discuss any of the papers, I cannot pass this one up. My attention to the pathology in the posterior urethra of the female was attracted by a paper I heard Dr. Alfred I. Folsom read in Nashville four or five years ago, and inasmuch as I had a son taking a residency in urology under him, I have been impressed with the amount of this work that he is doing. In fact, there is so much pathology in that region that has been overlooked that I am not surprised that such a man as Doctor Douglass has frequently reported on these conditions.

In the short time that would be allotted me it would be difficult to go into the subject in detail, neither would it be desired by you. I know of no area in the female urology that suffers more than the posterior urethra, yet it is surprising to see how often it is overlooked.

Most of these cases come to a urologist because they are suffering with symptoms that do not respond to the ordinary urinary antiseptics, and unfortunately many of them have been to urologists who have cystoscoped them, working out their upper urinary tract thoroughly and failed to see this area, and even they frequently report negative

results. It is not a rare thing for the urine to be free from pus or other evidence of pathology. Because of the tendency to receive relief from the passing of the cystoscope, they do not return for further check-up; and should they desire to have another examination, they frequently go to another urologist or they sometimes report to us that our treatment, which in reality was an examination, cured them of their condition.

Until we received our modern cystoscopes, such as McCarthy panendoscope, we almost invariably focused our attention to the bladder and upper urinary tract, and about the nearest we got to any pathology in the bladder was a slight trigonitis. These patients going to a gynecologist would naturally not have their pathology found, and those going to a general practitioner would usually receive some urinary sedatives. In other words, the urologist looked over it, the gynecologist looked under it, and the general practitioner did not know it existed. Indeed, I think we can justly term the posterior urethra in the female, "the no man's land" in medicine.

The question of etiology, in my opinion, can best be determined after we take a complete history. It is surprising to learn that so many of these patients give a history of having had a pyelitis or better still "kidney trouble" when they were children, or they frequently report that they were bed-wetters, sometimes lasting up until they were in the twenties. This latter condition is so common that I believe that they receive their infection during their diaper-wearing period, and the fact that it occurs in females almost exclusively further justifies that assumption. They usually overcome these infections in the early period and it becomes quiescent to flare up again when there is some trauma to this area, such as childbirth, surgical operations, followed by passing of catheters, the application of radium or deep X-ray therapy, and occasionally brought on by long automobile rides. Of course neither of these latter conditions are the primary etiological factor; they just cause an exacerbation of the already present condition, and the passing of the catheter, which is frequently termed a dirty catheter, has nothing to do with the etiology. It also is an exciter.

The pathology of this condition can be readily understood if we will take in consideration the lymphatics of the posterior urethra and trigone. They drain through the lymphatic glands, up around the ureters and the pelvis of the kidney. In 1936, Dr. Winsbury White of London had an article in the *Journal of Urology* in which he went into the relationship between the pathology in the lower urinary tract and pathology in the upper urinary tract, especially renal calculi. He pointed out that by injecting India ink in the posterior urethra and trigone of the bladder, it was readily found all the way up these lymphatics, and I think we are justified in assuming that if the ink particles can be carried by these lymphatics, infectious

organisms could also be carried by them; and if there was a stasis in the urinary tract from strictures, kinks, ureters or even the physiological hydronephrosis and hydroureters we find in pregnancy, there is always a likelihood of the production of an infected hydronephrosis which in turn might account for the urinary lithiasis. It is my opinion that most of the infections that take place in the upper urinary tract do so by way of the lymphatics, although this has been disputed many times.

The treatment, I think, is very important. I do not altogether agree with what has been said relative to the use of silver nitrate. I do not think it has any place in the treatment of this urinary condition. Dilatations of the urethra of the simple granular type will bring about relief, but of the papillary type it is necessary to fulgurate same, although prolonged treatment is necessary for a permanent cure. The late Dr. Cooper Holtzclaw, many years ago, made the statement that the way to cure an incurable cystitis in the female was to dilate the urethra until the finger could be inserted in it. I think that his statement was fairly justified in view of the fact that we did not know any

more about it than we did. Undoubtedly his cases he cured by the dilatations were the granular type of the posterior urethra, involving the trigone, and in reality not a cystitis.

I want to especially call your attention to the fact that it is my opinion that most of the so-called radium burns are nothing more than the excitation of a glandular posterior urethritis and can be cured by proper attention to that area. Also I believe that the pyelitis in pregnancy frequently occurs because of this same condition, and with proper attention to that during the prenatal period it can be prevented.

I want to reiterate my appreciation of Doctor Douglass' paper. I think it is very timely and will stimulate our interests in the baffling question and will result in obtaining relief in these patients that have so long suffered with temporary or no relief.

DR. HENRY L. DOUGLASS (closing): I do not want to prolong this, though I wish to thank all the gentlemen for their discussion. I will not go into the treatment because the hour is late. I appreciate everything these gentlemen have said and I have learned something from them.

THE TREATMENT OF CARCINOMA OF THE LIP*

GEORGE S. JOHNSON, M.D., Nashville†

GENERAL DISCUSSION

IT SEEMS that there is considerable doubt in the minds of many practitioners of medicine as to the relative usefulness of various types of therapy used in treating carcinoma of the lip. It is our belief that no one type of therapy should be used exclusively.

In general, there are two separate and important things to consider in all cases of carcinoma of the lip. First, and of least importance, is the consideration of the original lesion itself. Second is the consideration of the cervical lymph nodes.

Carcinoma of the lip is one of the easiest of all cancers to diagnose and cure. The diagnosis should be apparent very early in the disease and is easily confirmed by biopsy. The original lesion is very easy to eradicate except when very far advanced. The diagnosis of cervical metastasis and its cure is much more difficult. Carcinoma of the lip practically never extends beyond the cervical lymph nodes and death is essentially a local one. Hence, prevention of the involvement of the regional nodes, or the eradication of early metastases is of more importance than in most carcinomas.

In our experience practically all deaths occur in patients who have been neglected altogether until very late in the disease, or those in whom the local lesion has been cured with neglect of the cervical nodes.

TREATMENT OF THE LOCAL LESION

Carcinoma of the lip is the ideal cancer, and the one which is probably treated most often by cancer quacks. It is perfectly possible to cure the local lesion by the application of various "pastes." However, the same thing can be accompanied by either surgical excision or some type of irradiation. These methods give much better cosmetic results with much less danger, pain, and inconvenience to the patient. In addition,

this treatment always ignores the possibility of metastasis.

As to the choice between operation and irradiation, it is our belief that in a large majority of cases the local lesion can be treated with equal effectiveness by either method. However, we believe that in the very small early lesions it may be more convenient and expedient to excise them. As pointed out by Blair, Brown, and Hamm,¹ this amounts to little more than a biopsy. A biopsy should always be taken in all cases, for record if not for diagnosis. In these cases, the excision is done with a small cutting cautery and no repair is necessary.

In the group of somewhat larger lesions, we believe that better cosmetic results can often be obtained by excision and careful plastic repair. In these cases we have practically given up the old V type of excision. This operation is perfectly satisfactory for a comparatively early lesion. However, these do not require the removal of so much tissue, and better cosmetic results can be obtained by removing a rectangular piece of tissue, followed by repair as illustrated in Figure 1.

For more advanced lesions and especially those near or involving the corner of the mouth, we prefer doing a wider excision. This is repaired by using part of the upper lip to reconstruct the lower, as suggested by Brown² and shown in Figure 2.

We believe that the very advanced cases are much better treated by radiation. In these cases there is more certain eradication of the primary carcinoma with less loss of tissue, better cosmetic results, and less extensive plastic operations necessary for repair than with radical excision.

The type of radiation employed will depend on what is available. In my experience adequate X-ray therapy has given results equally as good, if not better, than less available and more complicated radium therapy.

Each case should be considered individually when choosing the type of treatment to be used.

*Read before the Tennessee State Medical Association, Chattanooga, April 9, 10, 11, 1940.

†From the Department of Surgery, Vanderbilt University.

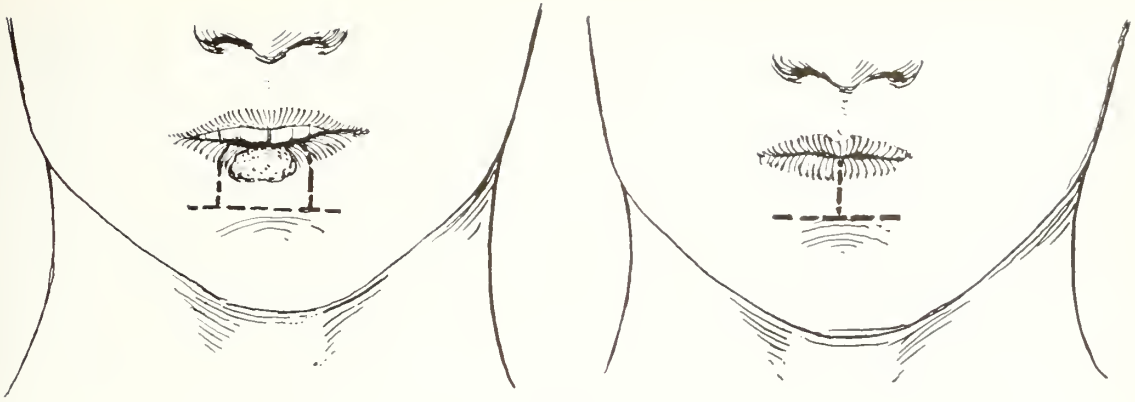


Fig. 1.

CONSIDERATION OF THE CERVICAL NODES

This is the most important and difficult consideration in the treatment of carcinoma of the lip.

It is becoming increasingly evident, as has been pointed out by Cutler and Buschke,³ that radiation is of questionable value either as a prophylactic or therapeutic agent in controlling metastases to the cervical lymph nodes from carcinoma of the lip except when used in conjunction with operation.

Carcinoma of the lip metastasizes to the cervical nodes much later than carcinoma of the oral cavity. For this reason, one may expect a fairly high percentage of cures in very early cases, without doing anything about the cervical lymph nodes. However, carcinoma of the lip metastasizes first to the submental and submaxillary glands and only comparatively late to the deep cervical. Hence, the lymph nodes most likely to be involved are the ones which can be removed most easily and with

the least danger. Also, as has been pointed out by Blair, Brown, and Hamm,¹ metastasis, rather remote as to time and position, may occur in patients having had a cure of the local lesion without neck dissection.

Cutler and Buschke³ divide cases of carcinoma of the lip into three stages: 1, cases without palpable lymph nodes; 2, cases with palpable lymph nodes which are mobile and operable; and 3, cases with inoperable lymph nodes.

The only objection to this division is the difficulty in differentiating inflammatory from carcinomatous nodes. All ulcerative lesions around the mouth eventually result in inflammation of cervical nodes.

In group 1 the probability of involvement of the lymph nodes with carcinoma before they are palpable is small. However, the percentage of cures, especially in series of cases followed over long periods, will be greater if neck dissection is carried out. One must weigh the chance of metastases against the low mortality of the type of neck dissection (suprahyoid) carried out in these cases.

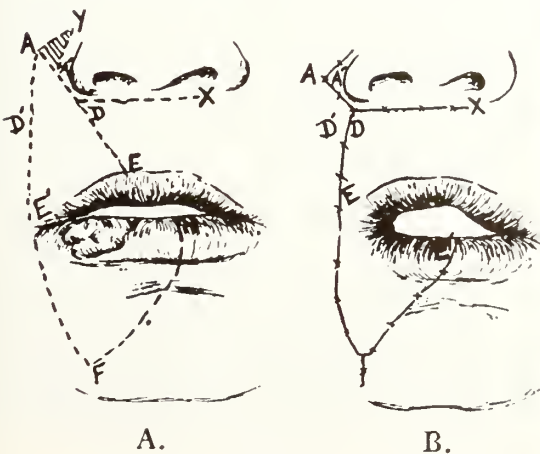


Fig. 2.

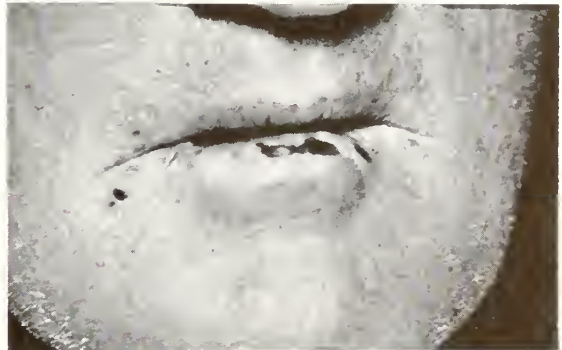


Fig. 3.—Case No. 1, before operation.



Fig. 4.—Case No. 1, after operation.

Cases in group 2 demand neck dissection. It has been our practice to follow neck dissection with deep X-ray therapy in those cases where the excised nodes showed carcinoma microscopically.

Group 3 is the group most often neglected entirely, or only given palliative X-ray therapy. It is in this group that radiation and operation can be combined most advantageously. In these cases the local lesion should usually be treated by radiation.

The inoperable lymph nodes should be treated by radiation and may be converted into operable cases. This is well illustrated by Case Report No. 6.

RESULTS OF TREATMENT

We cannot at this time present a statistical analysis of a large series of cases, as the follow-up on them is still in progress. We have selected a small group of cases to report, all of whom have been treated during the past six years, and all of whom are living. These cases simply illustrate the types of treatment employed.

The very extensive and far advanced cases of carcinoma of the lip involving the mandible have not been discussed. All carcinoma secondarily involving bone, whether arising from the lip or within the oral cavity, demand special and very different treatment.

Carcinoma of the upper lip has not been discussed. We have had only one of them in our series. That was a basal cell carcinoma in a woman. These tumors are a separate entity, and have more in common with carcinoma of the face than with carcinoma of the lower lip.



Fig. 5.—Case No. 2, before operation.

SUMMARY AND CONCLUSIONS

A discussion of the indications for operation and irradiation in the treatment of carcinoma of the lip is given with case reports to illustrate them.

CASE REPORTS

Case No. 1.—White male, aged sixty-two. Very early, rather diffuse carcinoma of lip of short duration. Biopsy showed squamous cell carcinoma of low-grade malignancy. No cervical lymphadenopathy. Local excision with cautery.

Case No. 2.—White male, aged fifty-three. Early carcinoma. Biopsy showed moderate malignancy. Local excision and plastic closure as shown in Figure No. 1. No cervical lymphadenopathy.

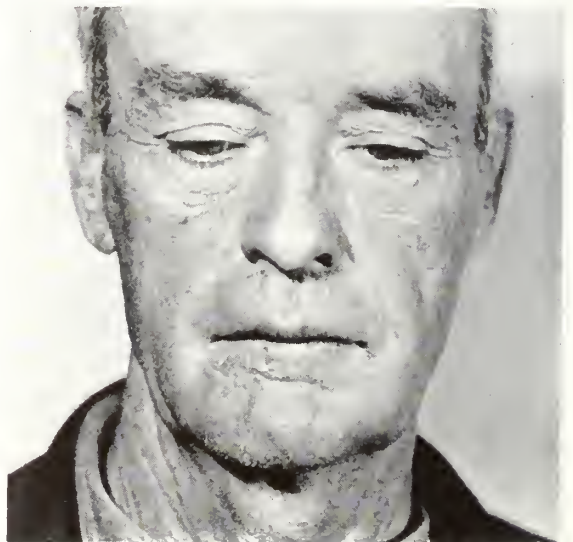


Fig. 6.—Case No. 2, after operation.



Fig. 7.—Case No. 3, before operation.

Case No. 3.—White male, aged sixty-one. Advanced carcinoma of lip. No cervical lymphadenopathy. Low-grade malignancy shown by biopsy. Local excision and plastic repair according to Figure No. 2-A. Refused neck dissection.

Case No. 4.—White male, aged forty-seven. Advanced carcinoma of lip. The biopsy showed high-grade malignancy. Excised and repaired in manner similar to Case No. 3. Neck dissection also carried out. Microscopic carcinoma found in cervical nodes.

Case No. 5.—White male, aged forty-four. Advanced carcinoma of lip of moderate malignancy. No cervical lymphadenopathy. Local excision and repair similar to Cases 3 and 4. Deep X-ray therapy to neck.

Case No. 6.—White male, aged sixty-four. Very far advanced carcinoma of lip of



Fig. 9.—Case No. 4, before operation.

between one and two years' duration. Large mass of fixed, inoperable type. Cervical nodes on right.

X-ray therapy only to lip. Deep X-ray therapy to neck followed by radical neck dissection. This patient is without recurrence five years later.

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2. Brown, J. B.: "Switching of Vermilion-Bordered Lip Flaps." *Surgery, Gynecology, and Obstetrics*, p. 701, May, 1928.
3. Cutler, Max, and Buschke, Franz: "Cancer—Its Diagnosis and Treatment." W. B. Saunders Company, Philadelphia, 1939.

DISCUSSION

DR. C. M. HAMILTON (Nashville): Dr. Johnson has presented a carefully-prepared paper on a subject of universal interest. The plan of dealing with cancer of the lip is sound, and there is very little reason for controversial comment except in a few minor instances. It is agreed that cancer of the lip is not a problem for any one method of therapy, but a condition that requires cooperation between the surgeon and the radiologist. The employment of different therapeutic agents properly applied should give better results than one measure used singly.

Cancer of the lip is situated in a conspicuous location, and the ease with which it is diagnosed should lead to early attention. While it is not so easily cured as an epithelioma of the skin of the face, it is more amenable to treatment than intra-oral carcinoma.

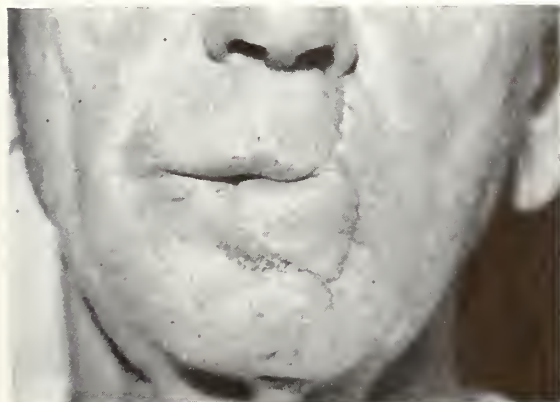


Fig. 8.—Case No. 3, after operation.



Fig. 10.—Case No. 4, after operation.

Any destructive measure is sufficient to relieve the local condition. Excision or eradication by electrocoagulation, by cautery, and by irradiation are equally effective. Cosmetic results and thoroughness in application are objectives of most importance. Fractional doses of moderately filtered X-ray therapy of medium voltage, administered once a day or once every two days for four to six treatments, give better therapeutic and cosmetic results than a single caustic dose of unfiltered radiation, as was formerly the custom in most instances.

The use of X-ray is preferable to that of radium since it is more simple to apply, the dosage is easier to estimate, the time consumption is shorter, and the normal tissues can be better protected.

As Dr. Johnson has emphasized, the problem of prime importance in cancer of the lip is the determination of the best method of handling the adjacent lymph nodes. Fortunately, only about twenty per cent of the cases present palpable glands, and twenty to thirty per cent of these are not malignant. On the other hand, fifteen to twenty per cent of the cases without palpable nodes are found to have metastatic involvement. On the average, metastasis takes place about the sixth month.

Carcinomas in the center of the lip, at the commissures, or on the intraoral side, produce lymphatic deposits more readily than those on the sides of the lip. Rapidly growing lesions disseminate sooner than growths of slow development. A few observers advocate removal of submental and submaxillary glands routinely. This method will result in a very beneficial removal of early metastatic nodes in a few cases, but will entail many unnecessary operations, and a small percentage of operative mortality. Many observers with a wide experience prefer to treat the local lesion and adopt a conservative attitude towards the regional lymph glands if they are not palpable. When the carcinoma is more than two centimeters in diameter, most authorities advocate resection regardless of palpability of adjacent lymph nodes.

It is the consensus of opinion that the combination of radiation and surgical resection offers the best chance of recovery in cases with glandular involvement.

Palpation is a valuable diagnostic aid in the clinical differentiation between benign and malignant tumors, and is also a worth-while adjunct in estimating the degree of malignancy. Bloodgood once said that malignant bone tumors feel much larger than they appear from the X-ray film. This



Fig. 11.—Case No. 5, before operation.

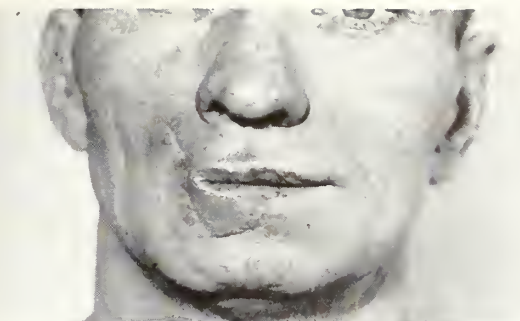


Fig. 12.—Case No. 5, after operation.

is due to invasion of the tissues beyond the bony portion of the neoplasm. The same principle applies to the examination of lip lesions. A carcinoma feels larger than it appears by observation. A highly malignant growth may appear as a small superficial nodule, but the lip frequently feels hard, infiltrated, and inelastic. The malignant mass is sometimes cone-shaped with the apex of the cone at the mucous surface.

A general use of dental hygiene, including oral antisepsis, early removal of hyperkeratoses, leukoplakic excrescences, and other benign papillary neoplasms, and the discontinuation of pipe smoking will greatly minimize the incidence of cancer. A more thorough knowledge of this disease by the medical profession and a fuller understanding of the preventive measures by the public will facilitate early treatment and thereby reduce the death rate.

Dr. Johnson showed one case of cancer on the inner surface of the lower lip near the commissure, which, he thought, would be difficult to treat by irradiation. This is done easily by rolling the lip outward and fixing it with adhesive or by the use of a lead speculum. Almost any part of the mouth can be treated very effectively through a lead speculum.

DR. EDWARD T. NEWELL (Chattanooga): I did not intend to discuss this paper, but I have been so much impressed by it that I want to say a few words. I shall differ somewhat from the es-

sayist's ideas, in that I am more radical in my treatment. Unless there be wide metastases, I think resection of the lip in cancer is in order.

We have made it a rule, in our institution, if we might call it a rule, or a method, or rather a preferential procedure in the treatment of cancer of the lower lip, to do first a resection and then use radium. We do not use the radium until we are quite sure our suture line is going to be maintained. In other words, we do not apply radium on as soon as we have done the excision, but in ten to twelve days, or as soon as we *know* our mucous membrane has united and see that our cutaneous membrane is going to hold fast, we apply radium and follow this later with deep X-ray therapy. In every frank case, for the past fifteen years, we have used the trinidad of surgery (preferably the cautery), radium, and deep therapy in lip cancer.

There have been a few of these cases in which we have used radium first, those that are well advanced, and then followed this with deep therapy. We have also had in rare instances the astonishing occurrence, that the essayist showed you in his last case, of converting an inoperable case into an operable case. These cases were usually grades I and II malignancies.

I think it should be left to the judgment of the man who is handling a case as to whether he should resect these cases—excise cancer of the lip—then use radium and deep therapy; or whether he should use deep therapy primarily or use radium primarily. I do feel, however, that after one has had wide experience in the handling of these cases, he seems to possess the knowledge to select the procedure that is preferable and that will afford the best results.

The part of the paper which I was privileged to hear, and the cases that were shown on the screen, greatly impressed me with the manner in which the essayist treats cancer of the lip.

DR. GEORGE S. JOHNSON (closing): I want to thank both Dr. Hamilton and Dr. Newell for their very fair discussion.



Fig. 13.—Case No. 5, after operation.

As to Dr. Newell's discussion, he is entirely right about these being individual problems. Another thing that has decided me many times whether or not to do a neck dissection or resect the lip was the appearance of the microscopic section. You have to take the appearance of the lesion, the length of time the patient has had it, the physical condition of the patient, and, above all, the malignancy of the tumor as revealed by microscopic study and make it entirely an individual thing.

We have not used the local application of radium or X-ray either; that is, to the local lesion after excision, because it has been extremely rare in our experience to have the local lesion reappear either when it was treated by excision or with X-ray.



Fig. 14.—Case No. 6, before treatment.



Fig. 15.—Case No. 6, after X-ray treatment.



Fig. 16.—Case No. 6, after neck dissection.

THE JOURNAL

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TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of
Tennessee

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H. H. SHOULDERS, M.D., Editor and Secretary

JULY, 1940

THE ISSUE

SHALL PATIENTS AND DOCTORS RETAIN THEIR FREEDOM OF JUDGMENT IN THE MATTER OF MEDICAL CARE, OR SHALL THIS FREEDOM BE SURRENDERED TO SOME GOVERNMENTAL AGENCY?

EDITORIAL

PLANNED ECONOMIES AND THE MEDICAL PROFESSION

By the kind permission of the author, Mr. J. Howard Pew, member of the Board of Trustees of the Jefferson Medical College, and by Mr. F. H. Uthoff, the dean, an address delivered by Mr. Pew is reproduced in this issue of the JOURNAL on another page.

It is the belief of the editor that this address will be very useful to the medical profession.

MEDICAL PREPAREDNESS

At the present time every thinking person is concerned with the question of military preparedness. It has become apparent that the only way to preserve the principles and institutions we cherish is by being in position to defend them effectively against attack.

Military preparedness involves medical preparedness. The House of Delegates of the American Medical Association took action at the recent session in New York to place the facilities of the American Medical Association at the disposal of the federal government in working out this problem of medical preparedness. A committee on medical preparedness was appointed "to establish and maintain a suitable relationship with all governmental agencies concerned with the prevention of disease and the care of the sick, in both civil and military aspects, so as to make available at the earliest possible moment every facility that the American Medical Association can offer for the health and safety of the American people and the maintenance of American democracy."

This action was not taken as a result of hysteria or panic. To the contrary, it was taken for the purpose of offering constructive aid to our common country in bringing about a state of military preparedness regardless of whether war does or does not come.

A great deal will be required of the medical profession in meeting this situation. In the first place, doctors must make the physical examinations to determine whether or not an applicant for admission into military service is physically fit.

Doctors must see to it that both the military and civil population receive the medical care that is needed. In addition to these, doctors must see to it that diseases are prevented to the fullest extent possible.

These steps do not mean that American medicine has forsaken its fight for the preservation of democracy in medicine—not at all. This step is taken as a means of preserving democracy itself for all.

THE NATIONAL COMMITTEE FOR THE EXTENSION OF MEDICAL SERVICE

In recent weeks opportunity has been had to hear expressions from doctors representing every state in the Union with reference to the National Committee for the Extension of Medical Service.

It is interesting to note that not one word of objection to the committee, or criticism

of its activities, was heard on the floor of the House of Delegates of the American Medical Association at the recent session in New York.

The old statement, "Let the American Medical Association do the job," has been answered effectively. It is now understood that the Association cannot possibly do all that is to be done without running the risk of having all activities curtailed.

Many members of the medical profession are not fully aware of the techniques that have been employed by agencies of the federal government to discredit the American Medical Association.

First, the Association is under indictment by a federal court in the District of Columbia. The issue is that of criminal conspiracy to restrain trade. The Association has not been convicted of the charge. We have every faith it will not be, but the publicity which the action has inspired, and may yet inspire, has been and may be injurious.

In addition to this, recent amendments to the revenue act touching the question of income tax by organizations such as the American Medical Association have been adopted which make the Association liable for the tax in the event certain activities are carried on. All of which make it illogical for the American Medical Association as a scientific body to conduct the fight that must be conducted. This is much more than a fight for the American Medical Association; it is a fight on the part of every individual doctor for his status as a professional man.

The standing of the medical profession before the bar of public opinion is of vital importance. Contributions to the committee are essential.

THE BACKWARDNESS OF THE UNITED STATES IN THE MATTER OF SOCIAL LEGISLATION?

Just a few years ago some of the leaders in social uplift movements in this country expressed themselves very vociferously in lamenting the fact that progress in social uplift movements in this country was so far behind similar movements in certain European countries.

At the present time we do not hear much from these people. To the contrary, we hear a great deal of cries for help to enable millions of Europeans to live at all.

It is now increasingly obvious that the concentration of power in the totalitarian governments of Europe was accomplished, in large measure, as a by-product of so-called uplift movements. When the power is once concentrated it is put to many different uses.

It is appropriate to call to mind again the fact that it was necessary for this country to enact immigration laws to prevent the excessive immigration to this country from those countries with advanced social legislation.

It is strange that people generally will pay more attention to propaganda than to an obvious fact. There must have been something wrong to stimulate people to leave such superior advantages.

WISE DISTRIBUTION

The following editorial is taken from the *New York State Journal of Medicine*. It is reproduced by the kind permission of the editor:

"The policy enunciated by the New York State Association of School Physicians preserves an equitable balance between the school doctor, the health officer, and the private practitioner. The interests and duties of each are wisely defined and prescribed.

"School health services aim to create a wholesome sanitary environment, to disseminate authentic health information, to build up sound health practices, and to provide first aid to teachers and pupils in accidents and emergencies. The school physician should see that every child has a thorough annual examination and that defects found are corrected; he should issue regulations governing light, heat, ventilation, and cleanliness and take all necessary steps to prevent the spread of communicable disease. Essentially, however, his role is executive and educational; the school should not maintain clinics nor provide treatment.

"On the private practitioner falls the duty of performing the annual medical examination, correcting any defects discov-

ered, and providing immunization. The family doctor's knowledge of his patients is an invaluable asset in the performance of the health examinations, provided, of course, that this knowledge is not made an excuse for casual inspection and certification. The examination should be painstaking and complete and follow the course laid out by the Department of Education.

"Should the family doctor fail to provide immunization, the Health Department may rightfully step in. Likewise, the school physician may take the initiative to secure the correction of remediable defects neglected by the private practitioner.

"Under this policy, the function of these three servants of child health supplement one another, but do not overlap. The family physician is primarily responsible for performance of the health examination, but the school physician prescribes its form and fits its results into the general school health program. Both the school physician and the public health officer are concerned with the prevention of communicable diseases, but they need not duplicate each other's efforts. While the Health Department and the private practitioner are both charged with responsibility for immunization, the usual arrangement is for the Health Department to supply the materials while the family doctor performs the treatment. This is an example of effective cooperation growing out of sound judgment and good will."

DEATHS

DR. GEORGE B. BROWN

Dr. George B. Brown, Dyersburg; Memphis Hospital Medical College, 1899; aged sixty-five; died June 23, 1940.

DR. J. T. HAYES

Dr. J. T. Hayes, Oliver Springs; University of Nashville, Medical Department, 1901; aged sixty-six; died June 28, 1940, from injuries received in a fall from a ladder.

DR. A. F. RICHARDS

Dr. A. F. Richards, Sparta; University of Tennessee, College of Medicine, 1893; aged seventy-four; died June 15, 1940.

RESOLUTIONS

DR. ROBERT EMMETT JOHNSON

Dr. Robert Emmett Johnson, age eighty-four, and the oldest member of the Wilson County Medical Association, died at his home near Lebanon, Tennessee, March 29, 1940. Doctor Johnson was a graduate of the University of Nashville Medical School, finishing there in 1879. He entered into the practice of medicine and surgery at Grant, Tennessee, in 1880. He practiced there until 1915.

Doctor Johnson moved to Lebanon in 1915 and continued active in the practice of medicine until 1933, when he was forced to retire due to bad health.

Doctor Johnson was a Christian gentleman and active in social life as well as in medicine. He was a member of the Presbyterian Church, a Mason, Odd Fellow, and a Woodman. He was widely known for his kindness and friendliness.

In his chosen profession he was quite well known in this section for his knowledge and ability, for he performed many operations under the most difficult conditions and practiced in a section with no hospital facilities for many years.

He enjoyed a wide practice and a successful one. He was a believer in organized medicine, having been a member and past president of both the Wilson County Medical Association and the Smith County Medical Association.

The passing of Doctor Johnson removes from Lebanon and Wilson County one of its best-loved citizens, a Christian gentleman, and a successful physician. By his death the Wilson County Medical Association has lost its oldest member and a tried and true friend.

In recognition of his noble character and his great attributes, the Wilson County Medical Association extends to the family

and friends of Doctor Johnson its deepest sympathy in their loss.

Therefore, Be It Resolved, That a copy of these resolutions be sent to the family, a copy to the State Medical Journal, a copy to the local papers, and that a copy be spread on the minutes of the Wilson County Medical Association.

DR. O. REED HILL, *President*

DR. R. B. GASTON, *Secy.-Treas.*
Wilson County Medical Association.

A RESOLUTION AND TRIBUTE TO DR. T. J. COBLE

On May 19, 1940, we were grieved greatly in the passing of Dr. T. J. Coble. We knew him as a true and loyal friend. We knew him as a progressive and outstanding citizen, and we knew him as a true and great physician. He was a man with a positive character, always standing by his convictions, yet he was charitable to the views of others. He was faithful and loyal to every duty entrusted to him. He possessed a high regard for the ethics of his profession and devoted much time and energy in promoting the things that were constructive to organized medicine. He had served several times as president of the Bedford County Medical Society and at the time of his death was its vice-president.

We bow submissively to the divine hand of him that doeth all things well and shall abide firmly in the belief that he has been called from a life of sacrificial service to one of eternal peace and rest.

'Tis the human touch in this world that counts

The touch of your hand and mine,
Which means far more to the fainting heart
Than shelter and bread and wine.

For shelter is gone when the night is o'er,
And bread lasts only a day,
But the touch of the hand and the sound
of the voice

Sing on in the soul away.

Therefore, Be It Resolved, That we have lost a true comrade and counselor.

Be It Resolved, That we extend to his bereaved wife and children our sincere sympathy.

Be It Further Resolved, That a copy of these resolutions be spread on the minutes, a copy sent to the family of the deceased, and a copy sent to the State Medical Association.

T. R. RAY

B. L. BURDETTE

J. N. BURCH

Bedford County Medical Society.
J. N. BURCH, *Secretary*.

NEWS NOTES AND COMMENTS

A STUDY TO EVALUATE SEROLOGIC TESTS FOR SYPHILIS

The United States Public Health Service is now conducting a study to evaluate the serologic tests for syphilis.

Serologists who wish to have a test for syphilis or a modification of tests which should be evaluated should make their application to the Surgeon General, United States Public Health Service, Washington, D. C., before October 1, 1940.

ANNOUNCEMENT

The College of Physicians of Philadelphia awarded the Alvarenga Prize on July 14 to Dr. Ernest W. Goodpasture, professor of pathology, Vanderbilt University, Nashville, Tennessee, for his outstanding contributions to the knowledge of viruses.

This prize was established by the will of Pedro Francisco daCosta Alvarenga of Lisbon, Portugal, an associate fellow of the College of Physicians, to be awarded annually by the College of Physicians on each anniversary of the death of the testator, July 14, 1883, to the author of the best memorial upon any branch of medicine, which may be deemed worthy of the prize.

ARE YOU A "CLINIC"?

Particularly in the last few years, it has become a rather common occurrence for one or more physicians to operate under the name "clinic." In this way the use of individual names of the members of the group are suppressed and, in many cases, a less personal relationship is established.

Occasionally this is done as a matter of convenience; often, to reap the benefits of the reputation achieved by some of the large nationally known groups; and perhaps frequently, because the arrangement of service is according to the definition of a "clinic" as commonly understood, and thus it is desirable to use this descriptive term.

Recently, a decision from one of the companies which sells protective insurance against malpractice suits came to light. They say the name "clinic" carried with it the implication of an organization which is equipped to render a superior quality of medical service, and the patient entering has a right to expect that he will receive a greater degree of care and skill than he would at the office of an ordinary private practitioner. Consequently, any physician operating under such a name would be held to a higher degree of care and skill than the general practitioner in the event he should be made the defendant in an action for malpractice, according to the legal lights of the indemnification company.

Another feature stressed is that each man with offices in the "clinic" building may be held liable for any negligence on the part of any of the others, whether medical, dental, or other, since the word "clinic" carries with it the implication of a partnership. Of course, the interest of the insurance company was that the rate to cover malpractice insurance for anyone who comes in that classification would be considerably higher than when practicing under one's own name as an ordinary private practitioner.

If you wear a high silk hat you may get your ears frozen.—*Michigan State Medical Journal*, June, 1940.

WOMAN'S AUXILIARY

President.....	Mrs. W. T. Braun
	Memphis
President-elect.....	Mrs. W. W. Potter
	Concord
Press and Publicity.....	Mrs. H. B. Bracken
	Nashville

RUTHERFORD COUNTY

Mrs. J. A. Scott Is Named to Head Medical Auxiliary

Mrs. Youree and Miss Hall were hostesses at meet held at Readyville.

Mrs. J. A. Scott was elected president of the Woman's Auxiliary to the Stones River Academy of Medicine at the meeting held Friday with Mrs. Annie Youree and Miss Mary Hall of Readyville.

Other officers elected were Mrs. S. M. Smoot, vice-president; Mrs. J. F. Adams, secretary; Mrs. A. J. Jamison, treasurer.

The auxiliary voted to make a contribution to the Red Cross fund for war relief.

Mrs. John Cason, program chairman, presented the Tennessee College Wandering Minstrel, who appeared in a group of musical selections.

At the conclusion of the program, an ice course was served.

DAVIDSON COUNTY

Honoring their husbands, members of the Auxiliary to the Nashville Academy of Medicine entertained Tuesday evening at their annual picnic at Lakeview, the home of Dr. and Mrs. James T. Hayes. Supper was served on the lawn. Mrs. Herschel Ezell was chairman of the affair. Mrs. Joe Travenick, Jr., outgoing president, introduced Dr. Hollis Johnson and Dr. W. B. Anderson, members of the Advisory Council, also Mrs. Fowler Hollabaugh, new president. Mrs. Travenick bade farewell to her many friends in the Auxiliary, as they contemplate moving to California in the early fall. We wish them much success and happiness in their new location.

MEDICAL SOCIETIES

Hamilton County:

July 11—"Some Phases of Neoplastic Diseases," by Dr. S. S. Marchbanks.

Scheduled to be read:

August 1—"Cancer of the Breast: Cautery Excision Supported by Radium and X-ray," by Dr. Edward T. Newell.

Beginning in September, the society will meet each week.

Knox County:

There will not be a regular meeting of the Knox County Medical Society until the third Tuesday in September.

Robertson County:

On June 18, a meeting was held at the Robertson County Hospital. Dr. A. R. Kempf read a paper on "Acute Cystitis." Discussion was led by Dr. W. L. Gossett.

Dr. W. W. Winters, president, presided at the meeting and announced that the next meeting would be held July 16 at the Ridgetop Lake as guests of Dr. W. S. Rude.

Physicians who attended this meeting were W. W. Winters, R. D. Moore, W. P. Stone, J. R. Connell, W. W. Porter, A. R. Kempf, J. E. Wilkison, R. H. Elder, W. L. Gossett, John S. Freeman, W. B. Dye, and W. F. Fyke.

OTHER MEDICAL SOCIETIES

The American College of Physicians will meet in Boston, Massachusetts, on April 21-25, 1941, with general headquarters at the Statler Hotel.

Dr. James D. Bruce of Ann Arbor, Michigan, is president of the college, and will have charge of the program of general scientific sessions. Dr. William B. Breed of Boston has been appointed general chairman of the session.

The nineteenth annual scientific and clinical session of the American Congress of Physical Therapy will be held September 2, 3, 4, 5, and 6, 1940, at the Hotel Statler, Cleveland.

For information concerning the seminar and preliminary program of the convention proper, address American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By HUGH BARR, M.D.
Medical Arts Building, Nashville

Some Practical Points in Meeting Poor Surgical and Anesthetic Risks in Surgical Diseases: Revised with Report of a Few Cases. Thomas J. Collier. *Current Researches in Anesthesia and Analgesia*, May-June, 1940.

Due to the widened field of surgery many poor risks are encountered, and it is not surprising that anesthetic deaths occur even in the hands of an expert medical anesthetist. Surgical risks should be subjected to certain critical tests, such as the Moot's index for cardiac reserve, which is obtained by multiplying the pulse pressure by 100 and dividing this by the diastolic pressure. If the result is below twenty-five or above seventy-five the risk is too great.

One of the simplest tests for cardiac reserve is the breath-holding method. The normal human being, after resting a few minutes after a normal expiration, can hold his breath at least twenty-five to thirty seconds. Individuals who cannot hold their breath this long are considered perilous risks. Severe acidosis may be expected when only five to ten seconds period is possible.

The most convenient anesthetic is not always the safest. Anesthetic risks are evaluated in four groups, as follows: Toxicity and convenience of the anesthetic, psychic reaction, shock and hemorrhage, and lastly, grave sepsis. The author states that subjects are more tolerant of local anesthetics when there is preoperative medication with barbiturates. He cites several cases of hip fractures in the aged carried directly to the operating room and hips pinned under nitrous oxide or cyclopropane anesthesia with excellent results. In those cases presenting fibrillation he recommends a wait of twenty-four hours for digitalization. He also recommends avoiding the danger of giving more than one dose of one-eighth grain of morphine or one-sixth dose of pantopon.

DERMATOLOGY

By R. L. PATTERSON, M.D.
820 Provident Building, Chattanooga

Histaminase in the Treatment of Allergy. Miller and Piness. *Journal of American Medical Association*, 114: 18, May, 1940.

Doctors Miller and Piness report a series of forty-two allergic cases which have been treated with histaminase. The theory behind this enzyme is that of an antagonist to histamine, which is

thought to be one of the main factors in the production of cutaneous allergy.

Of the forty-two patients treated twenty-eight had urticaria, six had atopic dermatitis, five had asthma, and three had hay fever. The patients were treated with both oral and parenteral histaminase in varying dosage. The average dose was from sixty to seventy-five units of the enzyme per twenty-four hours, with a minimum of 102 units, and the longest period of consecutive treatment was 180 days.

There was little or no reaction noted; however, in three or four cases there was a sense of sluggishness, vertigo, or weakness.

The results in this series of cases gave no definite evidence that histaminase was responsible for the relief or prevention of any of the signs or symptoms attributable to the allergic disturbances in question.

Five-Day Treatment of Syphilis. Walter Clark. *Journal of Social Hygiene*, 26: 5, May, 1940.

Due to the widespread newspaper publicity regarding the so-called "Five-Day Treatment of Syphilis," Doctor Clark has published this original article to clarify the present status of this form of treatment.

This form of treatment originated in 1931 at Mount Sinai Hospital under the direction of Doctors Chargin, Leifer, and Hyman. Their original work was done with neoarsphenamine and consisted of administering the drug by means of intravenous drip at the rate of twenty to thirty drops per minute for a total of five days.

Later the treatment was modified to the use of phenylarsine oxide (mapharsen instead of neoarsphenamine) since fewer toxic effects were noticed with this drug.

Too short a time has elapsed for one to be able to evaluate thoroughly the results obtained in this form of therapy. It is known, however, that both the clinical and serological evidences of syphilis promptly involuted during the course of the five-day treatment. In a small group of cases followed for three to five years, it was found that approximately eighty to ninety per cent remained clinically and serologically negative. A much larger series of cases and a longer period of observation is necessary before it is safe to put a great deal of confidence in the end results of this means of treatment. It must also be stated that the cases so far treated have all been males with early syphilis—the applicability of the regimen to latent and late syphilis and to prenatal or congenital syphilis not having yet been determined.

Treatment of syphilis by the intravenous drip method is not generally available, and, in the interests of safety and clinical efficiency, should not become routine treatment until many more hospitals and medical centers have had ample time and opportunity to experiment and to perfect this form of treatment, and to give statistical follow-ups.

So far, no heavy metals have been used in conjunction with this form of treatment purposely, so that a just clinical evaluation of the intravenous arsenical can be made.

This method of treatment offers great possibilities, and may enable the physician, in the near future, to render syphilis permanently noninfectious and to effect a serological and clinical cure in eighty to ninety per cent of cases treated by means of a few days of intensive therapy. If such be the case, the eradication of syphilis will be brought much nearer to reality.

In the meantime, the present standard method of treatment, which has been tested and tried throughout the world and which is generally available in every community, is the one upon which infected persons should depend.

FEVER THERAPY

By E. E. BROWN, M.D.
Doctors Building, Nashville

The Present Status of Electropyrrexia. Clarence A. Neymann, M.D.; S. M. Feinberg, M.D.; D. E. Markson, M.D.; and S. L. Osborne, B.P.E. *Archives of Physical Therapy, X-ray, Radium*, December, 1932.

INTRACTABLE ASTHMA

In all, fifty-two patients with chronic asthma were treated by this method. The analysis of the results is based on forty-four cases. The remaining eight are omitted because of insufficient data, failure to report, etc. Of the forty-four cases analyzed twenty-two, or fifty per cent, received a complete remission. This period of remission or entire freedom from asthma was of a duration varying from one week to nine and one-half months. Fourteen of the forty-four or thirty per cent had definite improvement in their symptoms, but no actual cessation of the asthma. The remainder, or twenty per cent, may be considered as absolute failures.

In the majority of instances, the results followed the administration of two treatments with an interval of two or three days between them. This is arbitrarily designated as a "course." In some, this course was repeated later when the effects of the previous treatment had subsided.

Auclair of Paris has confirmed these findings. He treated eight cases of asthma and states that remissions promptly occurred in all.

Their conclusions: This treatment for chronic asthma was designed for use only in those asthmatics who do not respond to such usual and accepted treatment as allergic methods and non-specific methods of the ordinary type. While it is true that many of the eighty per cent who were improved obtained relief for only a comparatively short period, even that is worth while in some instances. The relief obtained by several over a number of months lends additional encouragement to the use of the methods in suitable cases.

INTERNAL MEDICINE

By R. B. Wood, M.D.
By D. R. Thomas, M.D.
Medical Arts Building, Knoxville

Headaches of Allergic Origin. Dr. J. Warwick Thomas and C. R. K. Johnson. Symposium on Headache in Medical Clinics of North America, March, 1940.

The division is made of headaches into two groups—those of allergic and nonallergic origin. In the former group falls headaches whose chief characteristics are a tendency to be unilateral, occur intermittently, and accompanied or preceded by cortical or sensory disturbances of visual type and later found to end in nausea or vomiting.

As pointed out by Vaughan and Todd's review of the literature, the symptoms include such premonitory hyperactivity, irritability, and depression, with eye symptoms, emotional imbalance, gastrointestinal disturbances of all types and degrees. The pain is variable in intensity, location, and duration. With the attacks may occur transient psychosis, epileptiform seizures, ocular palsies, etc.

In the differential diagnosis, one must consider the nature of the allergic etiologic factors, including other manifestations of allergy, associated in addition to the presenting problem. All conditions present has to be proved or disapproved as being related to the existence of the headache.

The authors outline a program of investigation, including routine studies, X-ray, B. M. R., sensitization studies for the various foods, etc. Consultations with various specialists are sought when necessary.

The following outline is offered as a partial guide in the management:

SYMPTOMATIC

- (A) 1. Ergotamine tartrate (gynergen .25 milligram) (hypodermic most effective).
2. Epinephrine 1:1000 (adrenalin, minims 5—15).
3. Coal tar derivatives (acetanilid, phenacetin, or aspirin).
4. Barbituric acid derivatives (sodium amytal, phenobarbital, nembutal, etc.).
5. Endocrine therapy, including pituitrin.
6. Saline cathartics and colonic irrigations.
7. Gastric lavage.
8. Avoidance of fatigue and emotional upset.
9. Cold applications, and in some instances heat.
10. Narcotics (codeine, morphine, dilaudid, etc.).
11. Oxygen by inhalation.

THERAPEUTIC OR CURATIVE

- (A) History:
 1. Elimination of known offenders.
 2. Elimination of suspected offenders.

3. Elimination of dietary offenders.
4. Keeping of food diary.

- (B) Other allergic management and therapy:
 1. Avoidance of and hyposensitization to inhalant factors (common inhalants, molds, and pollens).
 2. Autogenous vaccine and nonspecific therapy.
- (C) Digestive aids:
 1. Diluted hydrochloric acid.
 2. Bile salts.
 3. Pancreatic enzymes.
- (D) Surgical treatment:
 1. Removal of foci (teeth, gall bladder, tonsils, etc.)
 2. Sympathetic ganglionectomy.
- (E) General measures:
 1. Control of nervous factors along with adequate rest. Maintenance of adequate diet and vitamin intake.
 2. Use of certain glandular products as indicated.

OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.
Suite 234 Doctors Building, Nashville

A Clinical Study of Stilbestrol. M. Edward Davis. American Journal of Obstetrics and Gynecology, June, 1940, Vol. 39, pp. 950-952.

The treatment of the menopause and primary amenorrhea with stilbestrol is discussed in this paper. Stilbestrol completely replaces the estrogenic activity of the ovary. It produces sexual maturity in the immature female with the exception of ovarian function. The prepubertal state is rapidly replaced by the physical and organic development of the mature woman. All of the secondary sex characters develop. The reproductive organs assume the normal adult type. The undifferentiated juvenile physical characteristics give way to the mature feminine form. The speed of the transition is remarkable, for all this is accomplished in a period of several months, whereas normal adolescence requires three or four years. When natural estrogens only were available, continued therapy was impossible and undesirable. Now that it is possible to take a small tablet once a day or less often, prolonged substitution becomes entirely feasible. There can be no question as to the desirability of continued therapy in these young women, providing this therapy is safe and no injurious effects occur. Only careful clinical observations and experimental studies over long periods of time will answer these questions. No one doubts the wisdom of continued substitution therapy in hypothyroidism, in diabetes, and in other glandular deficiencies. Why should one doubt the wisdom of continued therapy in hypo-ovarianism? The widespread clinical use of stilbestrol must await more adequate evidence as to its possible

toxicity. Pharmacologic experiments involving the long-continued administration of moderate amounts of this drug must be carried out to determine late undesirable effects. Careful clinical observations must be continued with the most guarded approach until such time as the lack of toxicity of the drug can be firmly established.

OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.
Doctors Building, Nashville

Late Results in Retinal Detachment Operations. D. K. Pischel. *Archives of Ophthalmology*, June, 1940.

Remarking that the true value of an operation for retinal detachment can be estimated only by reviewing the results after a period of time, Pischel studied patients who had been operated on at least a year previously. He discusses the results under: reappearance of detachment; degeneration of the macula; atrophy of the retina; optic atrophy; ectasia of sclera; troublesome hyperphoria; and development of cataract. The following summary is given:

"Of the sixty-three patients who had been operated upon at least a year previously, thirty-seven, or fifty-eight per cent, had a successful issue. Of these thirty-seven successful cases, only thirty-two could be found for re-examination.

"All cases had been operated upon by the Safar method of multiple diathermy puncture. While in the earliest cases only one line of pins had been inserted, in all the later cases double rows of pins had been used, together with transcleral treatment (Larsson) or with bident electrode.

"There were four cases of more than four years' standing, five of more than three years, six of more than two years, and eighteen of more than one year's standing.

"No relapse had occurred in any case which was 'cured' for three months.

"Four patients 'cured' had a recurrence within three months of the first operation, but were permanently cured by a second operation, while a fifth had two recurrences within the same period of time and was cured by a third operation.

"Only one case of cataract developed in previously uninjured lenses.

"Three cases of traumatic complicated cataract showed an increase in density of the lens opacity as did one of complicated cataract.

"All vision once regained was successfully retained except in three cases of cataract."

PEDIATRICS

By JOHN M. LEE, M.D.
Doctors Building, Nashville

The *Journal of the American Medical Association*, 114: 2537-2540, June 29, 1940.

There are two theories as to the cause of megacolon. One is that excess activity of the sympathetic nerve supply to the colon inhibits colonic contraction and contracts the sphincters, resulting in constipation. The second theory is that lack of tone of the parasympathetic innervation of the colon results in inadequate relaxation of the internal sphincter, poor peristaltic contraction of the colon, and constipation.

Those cases due to excess activity of the sympathetic system have been benefited in many instances by the operation sympathectomy. However, children under four years stand this operation poorly and are not much benefited. Success from the operation is not likely in those cases with marked colonic dilatation and a thin, weak musculature.

Since there is no test by which one may differentiate the causative factor, parasympathetic stimulation may be the best therapy. Such therapy contracts the colon, relaxes the intestinal sphincter, and leads to evacuation. The drug of choice for this effect is acetylcholine or one of its derivatives. This group of drugs slows the heart, lowers the blood pressure, dilates the peripheral blood vessels, stimulates sweat glands, and increases intestinal tone and peristalsis; it may constrict the bronchioles and incite an asthmatic attack in an allergic patient, or it may produce abdominal pain and vomiting if the dose is too large.

The author reports satisfactory results in fifteen cases of megacolon treated by the administration of acetyl-beta-methylcholine bromide (methylcholyl) by mouth. Before starting the drug the author gives for several days oil or soapsuds enemata once or twice a day and one-half to one ounce of liquid petrolatum at night to unload the colon of fecal concretions and gas. The initial dose of acetyl-beta-methylcholine bromide is .1 to .2 gram given from one-half to one hour after breakfast. In another two or three days it may be increased if necessary to .1 to .2 gram given in mid-afternoon. If diarrhea or vomiting occurs the afternoon dose is omitted. With this one-half to one ounce of liquid petrolatum is given at night and an enema as needed. When the dose is found that produces one or two stools a day the patient is discharged, taking usually .2 gram each morning a half an hour after breakfast and one to two tablespoonfuls of liquid petrolatum at night.

In some cases the maintenance dose of the drug was found to be .1 gram. In two cases it was found possible to omit all medication except the daily dose of liquid petrolatum after several months of therapy. Usually it takes from five to ten days to strike a balance with acetyl-beta-methylcholine bromide so that there are one or two stools a day. The patients treated with this drug by the author responded with daily evacuations, a decrease in the

The Treatment of Megacolon with Parasympathetic Drugs. John L. Law, M.D., Ann Arbor, Michigan.

abdominal distention, a general improvement in the physical condition, and a gain in weight.

ROENTGENOLOGY

By FRANKLIN B. BOGART, M.D.
Medical Arts Building, Chattanooga

Irradiation with Small Doses in the Treatment of Functional Gynecological Conditions. I. I. Kaplan. *American Journal of Roentgenology and Radium Therapy*, Vol. 42, No. 5, p. 731, November, 1939.

One hundred thirty-one married women referred in private practice and sixty-three in clinic service for treatment of amenorrhea or sterility between 1924 and 1937. One hundred seventeen of the private cases and thirty-nine of the clinic cases could be traced. Thus 159 of the 194 cases treated were followed and the results of the treatment known.

Of the 159 cases followed, 103 had regulation of the menses by the X-ray treatment, and in fifty-six no improvement resulted. The oldest case was forty-five and the youngest nineteen years. The group between twenty-one and twenty-nine years of age responded best to treatment.

Of the 103 patients whose menstruation was re-established, fifty-one cases became pregnant. In none of the patients were any harmful effects noted. Despite the unfortunate and unwarranted belief that harmful effects may occur to the mother or to the child, there is no basis for this belief when proper doses of irradiation are used.

TECHNIQUE

The areas over the ovaries received doses of seventy-five to 150 r (measured in air) at weekly intervals for three or four doses. The treatments were alternated between anterior and posterior pelvic fields of twelve by fifteen centimeters over each ovary. The factors used were 200 kilovolts, four milliamperes, .5 millimeter copper plus one millimeter aluminum. In 104 cases similar doses were administered to the pituitary gland through six by eight centimeter ports. The pituitary areas were treated at the same time as the anterior pelvic fields.

CONCLUSIONS

Roentgen therapy is of definite value in the treatment of functional disturbances of the ovary and in sterility. Irradiation is applied to the pelvis in most instances, and in some cases to the pituitary as well. Whether to treat only one or both is a matter of judgment, based on training and experience.

Careful observation over a number of years of children born of mothers so irradiated shows that such children are in nowise abnormal physically or mentally.

SURGERY—GENERAL AND ABDOMINAL

By BATTLE MALONE, II, M.D.
1400 Monroe Avenue, Memphis

The Late Results of the Injection Treatment of Hernia. Leonard Dobson, M.D. *Surgery*, 7: 836, June, 1940.

Through experimental studies begun in 1935, an attempt was made to determine the effect of injection treatment upon the hernial sac, cord, and testicle, and particularly how much fibrous tissue remained after six months or one year after the injections. It was shown that the injection of certain chemicals does produce scar tissue. Biopsies made after ten months showed small irregular islands of compact adult fibrous tissue. Where injections had been made into the spermatic cord there resulted thickening of the cord and the testicle became swollen for several days. In all the dogs the ductus deferens remained patent and the testicle showed no difference from those of un-injected cords. The patent processus vaginalis which is comparable to a hernial sac was not obliterated.

Conclusions drawn from these experimental studies were as follows:

1. The solutions used for injection (phenol-thuja, proliferol, and sodium psyllate) would not produce abscess or slough and would not give any constitutional reactions.
2. After six injections a firm indurated mass would appear, but after two or three months would subside.
3. The hernia sac would usually not be obliterated.
4. In an indirect inguinal hernia dilatation of the neck of the sac would be prevented by the scar tissue.
5. In direct hernia improvement might be obtained by contracture scar tissue around the sac.
6. A permanent cure may be expected only in the rare case in which the sac is obliterated.

Actual clinical experience showed that direct and postoperative hernias were not amenable to the injection treatment. In indirect inguinal hernias the injections were made first at the internal ring and later in the canal. Eighteen injections was the average number given. All cases wore trusses for about ten months. The results in indirect inguinal hernias showed recurrence rate of 37.73 per cent. In direct hernias there was sixty-eight per cent recurrences.

Conclusions from this study were: that the basis of cure from injection treatment is the fibrous tissue which persists between the fascial planes, muscle layers and spermatic cord which compresses the hernial sac; and that the injection treatment should be used only in small indirect inguinal hernias in patients with otherwise good abdominal structures who will not or cannot be operated upon.

UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.
By G. A. WILLIAMSON, JR., M.D.
307 Doctors Building, Knoxville

Treatment of Gonorrheal Arthritis: An Analysis of Two Hundred Cases. Ormond S. Culp, Johns Hopkins Hospital. *Journal of Urology*, May, 1940.

Arthritis occurs in from one to three per cent of cases of gonorrhea. The diagnosis depends upon the history, finding of the gonococcus in the urethral discharge and from the fluid of the involved joint, and the complement-fixation test.

The arthritic symptoms usually occur from the third to the fifth week of the disease, but may occur as early as the fifth day. Usually several joints are involved during the onset of the arthritis, later settling in one joint, more frequently one of the larger ones.

The inflamed joint may clear up entirely within a few days, or it may remain acute for a few weeks, and then subside completely. It may persist for several weeks and then gradually subside, leaving a joint with limited motion or complete ankylosis.

A series of 200 cases was studied in this report in an effort to determine the most satisfactory form

of therapy. One hundred five were acute, fifty subacute, and forty-five chronic cases; 130 were males, seventy females, 133 white, sixty-seven colored.

There were numerous types of treatments employed, all of which were either medical, surgical or orthopedic. Of the various treatments employed, sulfanilamide, intravenous mercurochrome, and fever therapy gave the best results.

Twenty-seven cases received intravenous mercurochrome. The dosage varied from ten to thirty cubic centimeters of a one per cent solution at from three- to five-day intervals. Sixty-nine per cent were discharged well or markedly improved.

Nineteen cases received fever therapy from one to five sessions of five hours each with a temperature of 106 degrees Fahrenheit. Fifty-three per cent were discharged well or markedly improved.

Twenty-two cases were treated with sulfanilamide. The total dosage varied from 14.4 to 105.6 grams, and the duration of therapy from three to twenty-two days. Sixty-eight per cent of these left the hospital well or markedly improved.

Each of these three methods of treatment may be the choice in certain cases; however, failures are to be expected with any form of treatment.

All cases of gonorrheal arthritis should have X-ray examinations of the affected joints.

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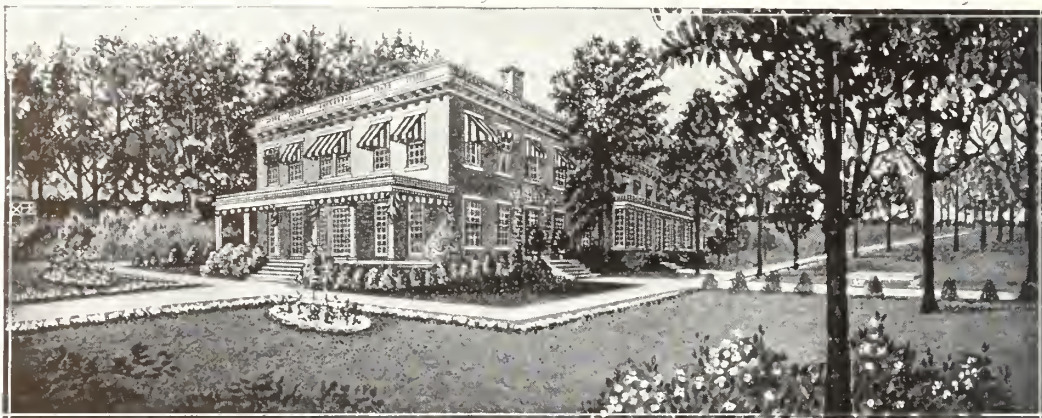
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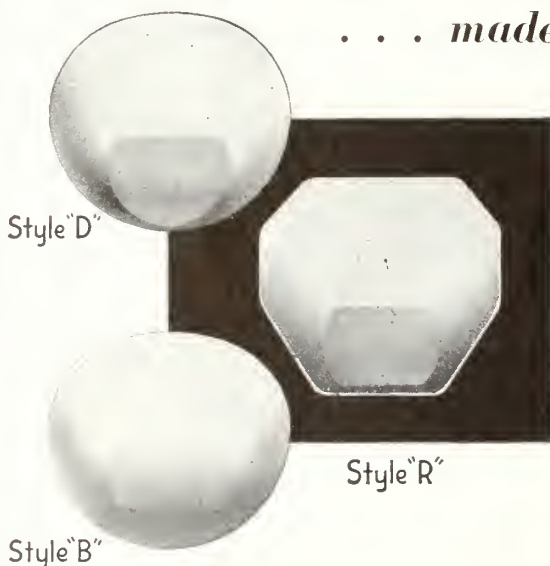
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THE BASIC SCIENCE BILL

A BILL to be entitled: An Act to amend Section 6911 of the Code of Tennessee relating to the preliminary examination for practice of medical arts, so as to require preliminary examination in the basic sciences, and to this end to create a Board of Examiners in the Basic Sciences; prescribe fees for the examination; fix the duties and powers of said Board of Examiners; and fix penalties for violations of this Act.

SECTION 1. *Be It Enacted by the General Assembly of the State of Tennessee*, That Section 6911 of the Code of Tennessee be and the same is hereby amended by striking out said section, from the words "provided, however," as the same appear in line nineteen (19) of said section of the official code, to the end of said section, and inserting in lieu thereof the following:

(1) *Basic Science Certificate Required.*—No person shall be eligible for examination or permitted to take an examination for a license to practice the healing art or any branch thereof, or be granted any such license, unless he has presented to the licensing board or officer empowered to issue such a license, a certificate of ability in anatomy, physiology, chemistry, bacteriology and pathology (hereinafter referred to as the basic sciences), issued by the State Board of Examiners in the Basic Sciences.

(2) *The Healing Art Defined.*—For the purpose of this Act, any license authorizing the licensee to offer or undertake to diagnose, treat, operate on, or prescribe for any human pain, injury, disease, deformity, or physical or mental condition, is a license to practice the healing art.

(3) *Board of Examiners in the Basic Sciences.*—The Board of Examiners in the Basic Sciences shall consist of five (5) persons to be appointed by the governor. Every member shall serve until his successor is appointed and qualified. The members of the Board shall be selected because of their knowledge of the basic sciences aforesaid. No member of the Board shall be actively engaged in the practice of the healing art or any branch thereof. The members shall be appointed one for two (2) years, one for three (3) years, one for four (4) years, and one for five (5) years, from the date of their respective appointments. Upon the expiration of the term of any member, the governor shall fill the vacancy by appointment for a term of five (5) years. Upon the death, resignation, or removal of any member, the governor shall fill the vacancy by appointment for the unexpired term.

(4) *Organization of Board, Election of Officers, Rules, Compensation.*—The Board shall meet and organize as soon as prac-

licable after appointment. It shall have power to elect officers, and to make such rules as it deems expedient to carry this Act into effect. The Board shall keep a record of its proceedings which shall be prima facie evidence of all matters contained therein. Each member of the Board shall receive Ten Dollars (\$10.00) per diem and actual expenses, when actively engaged in the discharge of his duties. The compensation of the members and the other expenses of the Board shall be paid out of the fees received from applicants. The treasurer of the Board shall give such bond, running in favor of the State, as the state treasurer shall determine.

(5) *Fees Payable by Applicants.*—The fee for examination by the Board shall be Ten Dollars (\$10.00). The fee for re-examination within any twelve months' period as hereinafter provided shall be Five Dollars (\$5.00), but the fee for re-examination after the expiration of twelve months shall be the same as the original fee. The fee for the issuance of a certificate by authority of reciprocity, on the basis of qualifications as determined by the proper agency of some other state shall be Five Dollars (\$5.00). All fees shall be paid to the Board by the applicant at the time of filing application. The Board shall pay all money received as fees into the state treasury, to be placed in a special fund to the credit of the Board. The state treasurer shall pay out of such fund all amounts for compensation and expenses of the Board on vouchers signed by the president and the secretary of the Board.

(6) *Examinations.* — The Board shall conduct examinations at such times and places as it deems best, having due regard to the times and places of the examinations held by the several professional examining boards authorized to issue licenses to practice the healing art in the State of Tennessee. Every applicant, except as hereinafter provided, shall be examined to determine his knowledge, ability, and skill in the basic sciences. The examination shall be conducted in writing. If the applicant receives a credit for seventy-five (75) per cent or more in each of the basic sciences, he shall

be considered as having passed the examination. If the applicant receives less than seventy-five (75) per cent in one subject and receives seventy-five (75) per cent or more in each of the remaining subjects, he shall be allowed a re-examination at the examination ensuing, upon application and the payment of the prescribed fee; but he shall be required to be re-examined in all branches. If the applicant shall receive less than seventy-five (75) per cent in more than one subject, he shall not be re-examined within the period of one year next following his original examination, nor unless he presents proof satisfactory to the Board of additional study in the basic sciences sufficient to justify re-examination.

(7) *Requirements for Certificate.* — No certificate shall be issued by the State Board of Examiners in the Basic Sciences unless the person applying for a certificate submits evidence satisfactory to the Board that (1) he is not less than twenty-one (21) years of age; (2) he is a person of good moral character; (3) he was graduated by an accredited high school, or school of similar grade or possessed educational qualifications equivalent to those required for graduation by such accredited high school, before he began the study of the healing art; and (4) he has a comprehensive knowledge of the basic sciences as shown by passing the examination given by the Board as by this Act required.

(8) *Reciprocity.*—The State Board of Examiners in the Basic Sciences may in its discretion waive the examination in the basic sciences required by this Act when proof, satisfactory to the Board, is submitted showing that the applicant has passed an examination in the basic sciences before a board of examiners in the basic sciences or a board authorized to issue licenses to practice the healing art, in another state, when requirements of that state are, in the opinion of the Board, not less than those provided by this Act.

The provisions of this section shall apply only to examinations conducted by the boards or officers of states that grant like exemption from examination in the basic

sciences to persons granted certificates by the Board created by this Act.

The provisions of this Act shall not apply to any person now legally entitled to practice the healing art.

(9) *Court Review of Action of Board.*—Any applicant who has been denied examination by the Board shall be entitled to have court review of such action of the Board in the manner provided by Code Sections 9008-9018.

(10) *Certificates and Licenses Void.*—Any basic science certificate and any license to practice the healing art or any branch thereof, which is issued contrary to this Act shall be void. A board which has issued a license by virtue of a void basic science certificate shall revoke or cancel such license. The procedure for such revocation or cancellation shall be in accordance with the provisions of the Act under which such license was issued for the cancellation or revocation of licenses generally. The certificate issued to any person by the State Board of Examiners in the Basic Sciences shall be automatically revoked by the revocation of any license issued to such person to practice the healing art or any branch thereof.

(11) *Practicing Without Basic Science Certificate Forbidden.*—Any person who shall practice the healing art or any branch thereof without having obtained a valid certificate from the State Board of Examiners in the Basic Sciences, except as otherwise authorized by this Act, shall be guilty of a misdemeanor and shall be fined not more than One Hundred Dollars (\$100.00) or imprisoned in the county jail not more than eleven months and twenty-nine days, or both, in the discretion of the judge trying the case.

(12) *Fraudulent Certificates Forbidden.*—Any person who shall obtain or attempt to obtain a basic science certificate by any dishonest or fraudulent means, or who shall forge, counterfeit, or fraudulently alter any such certificate shall be guilty of a misdemeanor and shall be fined not more than Five Hundred Dollars (\$500.00) or imprisoned in the county jail not more than eleven months and twenty-nine days, or both, in the discretion of the judge trying the case.

(13) *Fraudulent Licenses Forbidden.*—Any person who shall obtain or attempt to obtain a license to practice the healing art or any branch thereof from any board authorized to issue any such license, without presenting to said licensing board a valid certificate issued by the State Board of Examiners in the Basic Sciences, as in this Act required, shall be guilty of a misdemeanor and shall be fined not more than Five Hundred Dollars (\$500.00) or imprisoned in the county jail not more than eleven months and twenty-nine days, or both, in the discretion of the judge trying the case.

(14) *Issuance of Fraudulent Licenses Forbidden.*—Any person who knowingly issues or participates in the issuance of a license to practice the healing art or any branch thereof, to any person who has not presented to the licensing board a valid certificate from the State Board of Examiners in the Basic Sciences, or to any person who has presented to such licensing board any such certificate obtained by dishonesty or fraud, or any forged or counterfeit certificate, shall be guilty of a misdemeanor and shall be fined not more than Five Hundred Dollars (\$500.00), or imprisoned in the county jail not more than eleven months and twenty-nine days, or both, in the discretion of the judge trying the case.

(15) *Fees Paid Unauthorized Practitioners Recoverable.*—Any money paid out by any person as compensation for services rendered in the practice of the healing art or any branch thereof to any person not validly licensed to practice such healing art, or branch, may be recovered by the person who has paid such money by a suit instituted within two years from the date when such fee or compensation was paid.

(16) *Enforcement.*—The State Board of Examiners in the Basic Sciences and the various boards authorized to issue licenses to practice the healing art or any branch thereof shall investigate any supposed violation of this Act and report to the proper district attorney general all the cases that in the judgment of such board warrant prosecution. Every sheriff and peace officer shall investigate all supposed violations

of this Act and apprehend and arrest all violators thereof. It shall be the duty of the attorney general of the several districts to prosecute violations of this Act.

(17) *List of Registrants to Be Filed with Secretary of State.*—On or before the first day of March in each year, the secretary of the State Board of Examiners in the Basic Sciences shall certify to the Secretary of State, under the hand of the president and secretary of the Board, a list of all persons registered with said Board for the current year, and such list shall at all times be available to the secretaries of the several examining boards, authorized to issue licenses to practice the healing art or any branch thereof in this state, and a certified copy of said list shall likewise be admissible in evidence in any court proceedings where such list may be material.

(18) *Exceptions.*—This Act shall not be construed as applying to dentists, nurses, midwives, optometrists, chiropodists, barbers, cosmeticians, or Christian Scientists, practicing within the limits of their respective callings; nor to other persons licensed to practice the healing art or any branch thereof in this state when this Act takes effect; nor to persons specifically permitted

by law to practice without licenses, practicing within the limits of the privileges thus granted them; nor to the sale, manufacture, or advertising of drugs, medicines, household remedies, chemicals, and household preparations, provided that the vendor, maker or advertiser refrains from any attempt to diagnose.

(19) *Saving Clause.*—No provision of this Act shall be construed as repealing any law in force at the time of its passage with reference to the requirements governing the issuance of licenses to practice the healing art or any branch thereof; but any board authorized to issue licenses to practice the healing art or any branch thereof may in its discretion accept certificates issued by the Board of Examiners in the Basic Sciences in lieu of examining applicants in such sciences, or may continue to examine applicants in such sciences as heretofore. The unconstitutionality of any part of this Act shall not be construed as invalidating any other part thereof.

(20) *Short Title.*—This Act may be cited as "Basic Science Act, 1941."

SECTION 2. *Be It Further Enacted*, That this Act take effect from and after its passage, the public welfare requiring it.

A DISCUSSION OF THE BASIC SCIENCE BILL

Experience with basic science laws which have been in effect in a number of states for a number of years give proof of the fact that this type of law affords the best protection to the public against the hazards of unqualified practitioners of the healing art.

1. What is the basic principle in the basic science law?

A. The basic principle is that all applicants to practice any form of the healing art are required to stand an examination in the basic sciences—viz., anatomy, physiology, chemistry, bacteriology, and pathology.

2. What is the healing art?

A. The healing art is defined in the bill, Section I, Subsection 2, as follows:

"For the purpose of this Act, any license authorizing the licensee to offer or under-

take to diagnose, treat, operate on, or prescribe for any human pain, injury, disease, deformity, or physical or mental condition, is a license to practice the healing art."

3. Has Tennessee had a law requiring a preliminary examination?

A. Yes, a preliminary examination has been required of those desiring to practice that branch of the healing art known as medical practice. It has not applied to those who wish to practice osteopathy or chiropractic. Furthermore, this law applies mainly to the quality of the schools.

Section I of the basic science bill provides for the amendment of this law by striking out certain portions of it and adding the basic science law.

4. Who is required to stand an examination?

A. All applicants who wish to practice any form of the healing art with the exception of the following: dentists, nurses, midwives, optometrists, chiropodists, barbers, cosmeticians, or Christian Scientists. (Section 18.)

5. Would those now holding a license to practice any form of the healing art be required to stand an examination?

A. No. A license issued at any time prior to the enactment of this bill will remain good unless revoked for cause.

6. What is the general procedure followed in enforcing the basic science law?

A. A board of examiners in the basic sciences is created by the bill. It is the duty of the board to conduct examinations in the basic sciences at such times and places and during the year as the board may designate.

If the applicant is found qualified the board issues a certificate to the applicant which the applicant can present to any of the boards of examiners governing the various forms of the healing art in the State of Tennessee—viz., the Medical Board, the Osteopathic Board, and the Chiropractic Board. These boards conduct examinations in the practical subjects which pertain to the form of practice over which they have supervision.

7. Who composes the Board of Examiners in the Basic Sciences?

A. The bill provides for a board of examiners consisting of five persons who are selected because of their knowledge of the basic sciences. It is further provided that members of the board shall not be actively engaged in the practice of the healing art or any branch thereof.

8. What is the reason for the provision which makes it impossible for a practicing physician or osteopath or chiropractor to hold membership on the Board of Examiners in the Basic Sciences?

A. This provision is in the bill in order to remove any prejudice which might be created against the bill if it provided for a board composed of practitioners of medicine, osteopathy or chiropractic. Furthermore, these examiners need not be prac-

titioners. The examinations are conducted in the basic sciences only. They do not touch the practical branches.

There are already in existence boards of examiners whose duty it will be to conduct examinations in the practical branches of medicine, osteopathy, and chiropractic.

9. Is a knowledge of the basic sciences necessary to qualify a person to practice any form of the healing art?

A. Yes. No one can approach the diagnosis of a disease or injury and make an application of the proper remedy without a knowledge of the basic sciences. This statement applies with equal force to medicine, osteopathy, and chiropractic.

10. Will the passage of this bill affect reciprocity?

A. No, except to improve the standing of practitioners in Tennessee with other states.

It is provided that applicants for reciprocity with Tennessee must show qualification in the basic sciences by having a certificate from a board of examiners in another state with equal requirements.

A practitioner in Tennessee who obtains a license after the passage of the bill would have no difficulty in obtaining reciprocity with another state.

11. Will osteopaths and chiropractors oppose the passage of this bill?

A. It is hoped they will not do so.

The practitioners of osteopathy have expressed themselves as favoring the principle of the bill and applicants to practice osteopathy, chiropractic, and medicine are required to stand the same examination in basic sciences in all the states.

12. Which states in the United States have the basic science law in effect at the present time?

A. Alabama, Arkansas, Colorado, Florida, Iowa, Kansas, Michigan, Minnesota, Oklahoma, and Washington.

13. What forms of the healing art has the State of Tennessee recognized by act of the legislature?

A. The state has established examining boards to examine applicants to practice three forms of the healing art—viz., medicine, osteopathy, and chiropractic.

A SYMPOSIUM — A CRITICAL APPRAISAL OF SULFANILAMIDE AND ITS COMPOUNDS IN MODERN MEDICINE

MODE OF ACTION OF SULFANILAMIDE*

MILTON T. BUSH, Ph.D., Nashville†

The mode of action of sulfanilamide has been discussed in detail by Long and Bliss,¹ and except perhaps to mention some of the more recent literature I cannot augment their study. On the contrary, for the purpose of this brief consideration, it seems desirable simply to summarize only those points (all of which they have surveyed) concerning the "mode of action" which are rather well supported by experimental and clinical data.

Studies of the action of sulfanilamide on microorganisms *in vitro* have been made under such a variety of conditions that interpretation of the various results—often conflicting—is difficult. It is "essential to take into account the concentration of the drug, the peculiarity of the strain, the size of the inoculum, the age of the culture (possibly), the composition of the medium, the duration of the tests, and the temperature at which they are run." With due regard for these factors the experimental results show that in a fairly good medium sulfanilamide in .01 per cent concentration "is bacteriostatic for most hemolytic streptococci, for pneumococci, meningococci, gonococci, clostridium welchii, and Brucella melitensis; that somewhat higher concentrations, in a poor medium such as urine, inhibit the growth of staphylococci and of many of the gram-negative bacilli; that actual killing of most bacteria may be attained if sufficiently high concentrations of the drug are employed or if the environment is rendered sufficiently adverse to growth." In general, the drug is more effective the higher its concentration, the

higher the temperature, the smaller the number of organisms, and the poorer the medium. Many of the pathogenic organisms are not greatly affected by sulfanilamide, but of these a good proportion may be inhibited by sulfapyridine or sulfathiazole or other chemicals of this type, many thousands of which have now been synthesized and are being tested.

A definite relationship exists between the *in vitro* and *in vivo* effectiveness of the drug; namely, most of the organisms whose growth is checked in cultures are susceptible *in vivo*, either in experimental or clinical infections; and those organisms which do not respond in cultures do not respond when treated in the living host. These facts indicate strongly that the drug acts directly on the microorganisms. More direct evidence that this is true has come from observations of changes in the morphology of the treated organisms; however, their virulence seems altered only so long as the drug is present. The organisms after removal from the drug are, or quickly become, as virulent as they were before exposure to the drug.

The *in vitro* experimental work thus has led to much evidence in favor of the conclusion that sulfanilamide (and many similar compounds—sulfapyridine, sulfathiazole) acts directly on many microorganisms, and that the usual result is bacteriostasis.

The action *in vivo* is probably also to lower the rate of multiplication of the bacteria. Many attempts have been made to design experiments to discover whether other "curative" effects (neutralization of toxins, promotion of antibody formation, stimulation of phagocytosis) also enter into the picture.

Many observations concur that the presence of sulfanilamide in cultures either

*Read before the Tennessee State Medical Association, Chattanooga, April 9, 10, 11, 1940.

†From the Department of Pharmacology, Vanderbilt University School of Medicine, Nashville, Tennessee.

inhibits the production of toxins or neutralizes the effects of these substances. Most observers favor the former alternatives for the reason that the drug gives little or no protection when test animals are inoculated with, for example, meningococcal endotoxin, aertrycke polysaccharide, the fibrolysin of streptococci; yet such an effect as hemolysis in bone marrow cultures heavily infected with streptococci was prevented by the presence of sulfanilamide. A few experiments seem to indicate a direct effect of the drug on certain endotoxins, and this may possibly be part of the "mode of action" in these cases.

There is, in general, agreement that sulfanilamide has no direct influence on antibody formation.

The effect of the drug on phagocytosis has been studied. Most workers are agreed that it does not stimulate the "reticulo-endothelial" system. Administration of the drug to normal animals does not in any way alter the leucocyte pattern of the blood or of other tissues. The blood picture has been studied carefully during the courses of various infections, both treated and untreated, and the outcome of the disease has often been shown to be intimately associated with the rate of multiplication of the microorganisms. One of the most clear-cut of these experiments was carried out by Bliss and Long.² They infected mice intraperitoneally with *clostridium welchii*. In both controls and sulfanilamide-treated animals phagocytosis proceeded at a rapid rate. The number of bacteria, both free and ingested, increased in the controls until they died (six to eight hours). In the treated mice, at two hours, the number of free bacteria had already diminished, and at four hours the number both inside and outside the phagocytes had diminished markedly. At twenty-four hours free bacteria could not be found, and those inside the phagocytes were almost completely digested. This experiment showed conclusively that the drug acted solely to inhibit the growth of the microorganisms. Similar experiments with streptococcal peritonitis showed that phagocytosis was appreciable only in the animals which had received sulfanilamide.

This was attributed to a checking by the drug of not only the multiplication of the organisms, but also of the formation of "leucocidin"; this is a quite reasonable interpretation because the rate of production of "leucocidin" and other toxic products is proportional to the rate of growth; with these rates effectively reduced, phagocytosis was not greatly hindered. Similar experiments with pneumococci showed that a similar "mode of action" was in effect with sulfapyridine.

The mechanism by which these drugs cause inhibition of the growth of bacteria is unknown. Much experimental work has led only to further speculation. Some of the investigations of Mellon and coworkers^{3, 4, 5} and of others^{6, 7, 8} have been concerned with the interesting possibility that the drugs, or derivatives formed from them by oxidation *in vivo*, exert their effect through inhibition of the action of the enzyme catalase—, and the consequent accumulation of hydrogen peroxide. Attractive as this hypothesis is, it fits in with only some of the experimental facts and is at variance with others.

A second theory of the mechanism of action involves the concept that the drug interferes with certain metabolic processes of the microorganisms—viz., the utilization of food substances. It has been shown, most recently by Lockwood and Lynch⁹ and by Spink,¹⁰ that if "peptone" be added to the media, various bacteria grow very rapidly even in the presence of sulfanilamide (or sulfapyridine), whereas in the absence of "peptone" the growth is inhibited by the drug. This indicated that the drug interfered in some way with the ability of the enzymes of the microorganisms to digest proteins. Further development of this concept of the mode of action of sulfanilamide promises to elucidate the true mechanism by which this drug inhibits bacterial growth.

To summarize: The effectiveness of sulfanilamide (and of a number of similar drugs) in treatment of infections seems to be primarily due to bacteriostasis, which, with the concurrent action of the normal defenses of the body, forms a combination

which is often sufficient to overcome the infection.

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DISCUSSION

DR. R. B. WOOD (Knoxville): In dealing with mode of action of any chemical remedial agent, one must know if possible what direct action it has on the microorganisms and the extent to which its action is mediated by the tissues of the host. Also, as said by Mellon ("Sulfanilamide Therapy of

Bacterial Infections," Carl C. Thomas), the knowledge of the comparison of the dosages that are bacteriostatically effective in the test tube, and those that are therapeutically effective in the body. If large amounts are required in the test tube and small doses are effective in the animal body, then some change in the compound has taken place or some unknown factors are at work.

This paradoxical phenomena is exemplified by the drug under study, and Trefouel and others have shown it exists in the sulfanilamide portion of the molecule.

While we are still confronted with the original question as to just what the mechanism of action is, we cannot fail to notice the reports revealing the bacteriostatic changes in the blood of animals and man after ingestion of the drug. In the monkey three and one-half hours after the ingestion of four grams, it is noted that the bacteriostatic power of the blood is 1,000 times as great as normal blood and twenty-four hours later 100 times as much. These same ratios prevail regardless of whether it was protosil or sulfanilamide.

Evidence has been presented that both *in vitro* and *in vivo*, there is a direct action of the drug on the bacteria. The first hypothesis of Long and Bliss predicated that phagocytosis of highly virulent streptococci is conditioned by a direct action. No convincing evidence exists that the specific toxins are neutralized, nor are the leucocidins or the hemolysins.

SULFANILAMIDE AND ITS COMPOUNDS: THEIR USES IN MEDICINE*

J. O. MANIER, M.D., Nashville

The discovery of sulfanilamide and its derivatives, such as sulfapyridine, and their value in the treatment of certain infections, has opened a new avenue of assault on certain diseases against which heretofore medical science had made but unsatisfactory progress. The sound, safe, and effective use of these drugs may be said to revolve around the following essentials: (1) Subjecting the disease-producing organism to a concentration of the drug that will produce the maximum bacteriostatic effect. (2) The attainment of this desired concentration at an early stage of the disease when the body may be expected still to have or acquire the power to rid itself of the disease-producing organism. (3) The proper selection for treatment of disease states

which may have been shown clinically or experimentally to respond to these drugs. (4) A full knowledge of the complications that have been found to arise at times during such therapy.

It is generally accepted now that the desirable concentration of sulfanilamide is from eight to twelve milligrams per 100 cubic centimeters of blood and that in the use of sulfapyridine from four to six milligrams per 100 cubic centimeters gives excellent results. The ideal approach to the problem of adequate blood concentration revolves around frequent chemical analysis of the blood and the adjustment of dosage in terms of these findings. However, where facilities for such determinations are not available, reasonably satisfactory results can be attained if one has a thorough knowledge of the usual amount of the drug neces-

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sary to produce the desired concentration. In so far as sulfanilamide is concerned, .1 gram per kilogram of body weight or for an individual of 150 pounds, approximately ninety to one hundred grains during the twenty-four hours in most instances is adequate, while in the use of sulfapyridine the more generally accepted plan is an initial dose of two grams followed by one gram every four hours thereafter. These desired concentrations can more certainly and promptly be attained by the restriction of total fluid intake to 2,000 cubic centimeters as by so doing urinary output is decreased and rapid elimination of the drug lessened.

In the use of both drugs oral administration is the method of choice, and where nausea and vomiting are present to a degree to interfere, then the duodenal tube often serves as a helpful maneuver. To some extent nausea and vomiting are lessened by the concurrent administration of soda or other mild alkalis, as well at times by glucose intravenously. It has not been my personal experience that the suggested use of nicotinic acid by mouth or the barbiturates, such as nembutal by rectum, seem to be effective in reducing the incidence of these unpleasant symptoms.

Where parenteral use becomes necessary or advisable the disodium salt of sulfanilamide or prontosil can be given intramuscularly on the basis of one cubic centimeter per pound of body weight as the total daily dose—divided into four doses at six-hour intervals. Sulfanilamide itself may be given subcutaneously in .8 per cent concentration in normal saline, an average satisfactory dose for adults ranging from 400 to 700 cubic centimeters in the twenty-four-hour period. This same strength solution—i. e., .8 per cent in normal saline—can be used intraspinaly, fifteen to twenty-five cubic centimeters being administered as often as every eight hours after first withdrawing a somewhat larger amount of spinal fluid.

Sulfapyridine cannot be administered subcutaneously, intramuscularly nor intraspinaly, but is now available for intravenous use in the form of the soluble sodium salt of sulfapyridine—given in a five per cent solution in sterile distilled water or

normal saline—the initial dose in severe infections being five grams, with smaller doses repeated at six- to eight-hour intervals. Sodium sulfapyridine possesses the liability of causing occasional severe general reactions, and owing to its high degree of alkalinity of being highly irritant to the subcutaneous tissues, if there is any leakage from the vein, and hence should only be used where oral administration is impossible or unsatisfactory or in the more severe and virulent infections where prompt blood saturation seems urgent.

While the above-mentioned schema of dosage is adequate in the average case, one at times may find it advisable in unusually severe infections or alarmingly ill patients to bring about the desired concentration more rapidly by larger initial doses or for a limited time the more frequent repetition of the usual dose used. Here, as in the treatment of all diseases, sound clinical judgment is the *sine qua non* of success rather than following a rule of thumb. Unduly high blood concentrations are not desirable, and in this connection it is wise to remember that a patient with impaired renal function will not excrete these drugs as readily as one with normal function and hence more than ordinary care in the adjustment of dosage must be exercised in such instances.

From the clinical point of view, the most satisfactory results from the use of sulfanilamide have been obtained in the treatment of infections due to hemolytic streptococci, meningococci, gonococci, and those organisms commonly found in infections of the urinary tract, while sulfapyridine has produced excellent results in the management of pneumococcic infections and to a less degree in staphylococcic ones.

In humans sulfanilamide has been used with varying degrees of success in such streptococcic infections as erysipelas, cellulitis, streptococcic blood stream infections, puerperal sepsis, meningitis, peritonitis, scarlet fever, otitis media, Ludwigs angina, and osteomyelitis. Of these diseases the most outstanding results have been attained in streptococcic meningitis in that prior to the discovery of sulfanilamide the mortality

in this disease ranged from ninety-five per cent to 100 per cent, whereas now by the combined oral or parenteral and intraspinal administration the mortality rate has fallen as low as ten per cent to twenty per cent. In erysipelas and cellulitis the results likewise have been excellent, especially in relation to limiting the spread of the involved area and shortening the duration of the toxemia. The mortality rate of puerperal sepsis has likewise reduced from around twenty to twenty-five per cent to somewhere between five and eight per cent.

In meningococcic infections sulfanilamide has been strikingly effective, apparently being equally protective against the different strains of the meningococcus and rapidly clearing the blood stream of meningococcic organisms. It would seem sound judgment at the present time, however, in the management of meningococcic meningitis to combine sulfanilamide by mouth or parenterally with antimeningococcus serum intraspinally or intravenously.

In gonorrhea reports seem to point to the fact that a high percentage of good results is obtained in chronic cases or acute exacerbations of past infections than in acute first infections. Good results may be expected in cases of gonorrheal arthritis where the synovial fluid of the joint has been infected, as it has been shown that it has been found possible to sterilize this fluid within two days after administration of the drug. The results attained in the more common periarticular type of this disease have been less striking.

At the present time sulfanilamide appears to be our most useful urinary antiseptic and gives satisfactory results against practically all of the common organisms causing urinary infection with the exception of the streptococcus fecalis. The dosage necessary to obtain good results in urinary infections is not as large as in other conditions, varying usually from thirty to sixty grams in the twenty-four-hour period.

In undulant fever sulfanilamide seems to be definitely beneficial in reducing the fever and shortening the course of the disease, but usually to attain these results maximum doses are necessary.

From the Mayo Clinic and others groups have come satisfactory reports of good results in chronic ulcerative colitis, especially in that type from which streptococci have been cultured from the stools.

From many sources come reports of lack of material success in the use of sulfanilamide in staphylococcic infections, nonhemolytic and viridans streptococcic infections, typhoid fever, rheumatic fever, rheumatoid arthritis, chorea, malaria, tuberculosis, the various virus diseases such as the common cold, influenza, poliomyelitis, etc., as well as other conditions too numerous to mention.

The results of the use of sulfapyridine in pneumonia and pneumococcic infections in general is almost too well known to be mentioned. Any drug that can be shown to reduce mortality in pneumonia in unselected cases to the low level of five to eight per cent is due our deepest admiration and respect. And while it is possible that this low death rate may not be maintained in the future, in view of the incidence of more virulent pneumococcic infections, yet it would seem now firmly established that sulfapyridine has come to stay. One should not, however, allow one's enthusiasm over the results attained with sulfapyridine to cause one to overlook the value of anti-pneumococcic sera as well, as the combined use of the two remedies, in certain selected instances, should serve to attain better results and a lower mortality rate than the use of either principle alone. Among such instances might be mentioned the obviously unusually severe pneumonia from the onset, pneumonias with positive blood cultures, pneumonia complicating pregnancy, and those occurring in the debilitated or elderly persons.

No discussion of this subject should fail to include a plea against the present widespread, indiscriminate use of these remedies against any and all types of diseases. It might be said almost without exaggeration that they have been tried on everything from dandruff to ingrowing toenails. Because a remedy has proven its value in a severe infection such as streptococcic meningitis, for instance, does not justify us in

allowing our enthusiasm to run away with our judgment and cause us to apply it to such mild, more or less self-limited, diseases as the common cold or upper respiratory infection. Such practice, in my judgment, is not clinically sound, it is to be hoped that in the future the medical profession will cease the radical and improper use of these remedies, keeping in mind that often a remedy potent for good can cause evil as well.

DISCUSSION

DR. JACK WITHERSPOON (Nashville): Sulfanilamide, as Doctor Manier has just said, deserves our greatest respect, for any drug that could reduce the mortality of pneumonia from the accepted mortality, forty and fifty per cent down to five and eight per cent, deserves our respect and thanks. I think that his paper has certainly summarized it very beautifully. I think it was very timely that he named the diseases in which we can expect results. People have tried to use sulfanilamide on every infection that has come to our hands and have been disappointed, naturally. As the investigation goes on we feel that the use of the drug will be put on a firmer foundation and basis and that we will know the exact dosage to use per body weight for all these infections. It certainly is the most interesting drug of my time in medicine.

I think this symposium that has been arranged by the committee for the discussion of sulfanilamide is a most timely thing.

DR. A. D. MASON (Memphis): Doctor Manier spoke of one point in his paper that I think is worthy of a little more comment. He merely mentioned nicotinic acid in sulfanilamide toxemia and passed on by saying that in his hands the results had not been what he would expect from the use of nicotinic acid. My results with nicotinic acid have been quite good during the comparatively short time I have been using it. Just as with sulfanilamide, you are not going to get the results you expect in every case. I think all of us have had cases where we felt we should be able to depend on sulfanilamide, and it has miserably failed us, and we have gotten no benefit from it at all. Pretty much the same holds for nicotinic acid, but in the majority of cases where there has been hypersensitivity to sulfanilamide, or toxemia resulting from its use, I have gotten good results with the nicotinic acid, particularly if it is given in large doses to start with. In one case recently that developed a scarlatiniform rash, within twenty-four hours after starting nicotinic acid you could not tell the skin ever had had a rash on it. During that time he had received about 300 milligrams of nicotinic acid.

In several other cases I have tried it on patients who were not having what you would call a toxic reaction from sulfanilamide (that is, you would not

have discontinued the drug or even have lessened the dosage), but any of you who have ever taken it yourselves know that terribly weak feeling that you have—the gastric upset, etc.—and on those patients I have given it merely with the idea of trying to lessen those uncomfortable symptoms. After a few days, I have inquired of them whether or not they felt they were getting enough benefit from the nicotinic acid to warrant its continued use, and in almost every case they felt they were feeling more comfortable by taking the nicotinic acid with the sulfanilamide than they were when taking the sulfanilamide alone.

DR. T. M. ROBERTS (Sweetwater): I wish somebody would give us the knowledge as to whether or not this drug has not been experimented with in too large doses with toxic effects. Don't you think that better results would be had if we would give less of it and not poison the patient with it?

DR. J. O. MANIER (closing): Mr. President, I do not know that there is anything in particular that I have to add. In the paper in reference to the problem of the use of nicotinic acid, the statement is merely made that in so far as my personal experience goes in trying it I have never seen any particular value that it might have on the question of the development of nausea and vomiting. I was very much interested in Cleveland last week at the meeting of the American College of Physicians to hear a panel discussion of various new drugs, and men like Sydenstricker and Spies seemed to have had the same experience in relation to the use of nicotinic acid in controlling nausea and vomiting. As to whether nicotinic acid would have any effect on some of the other toxic manifestations of sulfanilamide, that might be a problem possibly.

In so far as dosage is concerned, I think there may be possibly in the future some very definite validity in what the doctor mentioned. We do not yet know just what is the most effective dosage probably. We do know what is the effective dosage to produce in most instances a definite level of blood concentration. I do not think there is any question, as I tried to bring out in the paper, that while sulfanilamide and its various derivatives represent probably the most satisfactory advance in medicine that has been made in my lifetime in that it has opened up an avenue against several diseases that formerly were almost incurable, like the streptococcic and pneumococcic types of meningitis, which I think are the most outstanding things, that the drug has affected, at the same time too much sulfanilamide has been used and sulfanilamide in many instances has been used in inordinate dosage. I think we should try to get our feet on the ground and that those of us who are in clinical medicine, largely, you might say, in general practice, rather than trying to be research workers who might discover new fields for the use of this drug had best follow the lead of men whose environment enables them to check the value of the use of the drug not only clinically, but experimentally as well.

SULFANILAMIDE IN SURGERY*

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In the few minutes allotted for the discussion of this new panacea, much of interest and detail will be, of necessity, omitted. However, much intensive and protracted study of sulfanilamide and its derivatives has been well under way in all the surgical specialties during the last few years throughout the world. Tennessee, too, has been recording its bit. Within the next year or two firmer conclusions and more rigid indications will be written for the surgical uses of sulfanilamide and its allied compounds. At present, all clinical research is still in the "trial and error" stage. As newer allied compounds are brought to light, as different methods of administration are introduced, as various and new toxic effects are being discovered and means of combating them are suggested, so will methods and treatments change.

In reviewing the experiences of some of the main surgical divisions to date, a brief résumé only can be presented, with due credit to those working with sulfanilamide in their particular fields.

I. OBSTETRICS

In the Department of Obstetrics of the University of Tennessee, Dr. J. R. Reinberger has reported and will soon publish a series of fifty-four cases of puerperal bacteremias. The cases are divided into two series as compared with Colebrook's series of England. One series before the use sulfanilamide, and the second series using sulfanilamide.

COMPARATIVE STUDY

<i>Presulfanilamide</i>	<i>Years</i>	<i>Cases</i>	<i>Deaths</i>	<i>Pct.</i>
Colebrook	1932-35	82	55	70.7
Reinberger	1927-35	43	22	51.1
<i>Sulfanilamide</i>				
Colebrook	1936-37	22	6	27.3
Reinberger	1936-37	11	2*	18.1

*Both cases admitted in moribund state and inadequate treatment administered—ten and twenty grains, respectively.

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†From the Divisions of Surgery, Gynecology, and Obstetrics, University of Tennessee, and the John Gaston and Baptist Memorial Hospitals, Memphis, Tennessee.

He concludes: "The mortality for the entire fifty-four cases, including those treated by sulfanilamide, was 44.4 per cent. Excluding those treated by sulfanilamide, the mortality was 51.1 per cent. The mortality following the use of sulfanilamide was reduced to 18.1 per cent. Colebrook's figures in the presulfanilamide group had a mortality of 70.7 per cent; our series, a mortality of 51.1 per cent. Colebrook's cases treated with sulfanilamide had a mortality of 27.3 per cent; ours, 18.1 per cent. A review of the two deaths in our small series of eleven cases revealed inadequate treatment, for only ten and twenty grains were given, respectively. It is almost unbelievable that such immediate results were achieved with this comparatively new drug."

II. GYNECOLOGY

From the Department of Gynecology, Dr. M. Wilson Searight has reported, and will soon have published, a series of 100 consecutive cases of chronic pelvic inflammatory disease. In his paper he discusses his work as follows:

"The Gynecological Service has used sulfanilamide extensively in pelvic inflammatory disease. We do not rely upon it alone, but combine its use with foreign protein and diathermy. Our sulfanilamide routine is to give eighty grains the first day, sixty grains the second, forty grains the third, and twenty grains daily thereafter for seven days. Blood studies are made every third day. Where blood is available and results are evident, we do not hesitate to continue the drug, making up the blood deficiency with repeated transfusions. A rise in temperature, nausea, or skin eruption calls for discontinuance. Where there is no improvement within three days, it is discontinued." Data tabulated on 100 unselected cases are as follows:

1. Average amount of sulfanilamide given per patient, 433 grains. (Most any one patient received 800 grains.)
2. Symptomatic improvement was noted in an average of 3.15 days.

3. Symptomatic relief was noted in an average of 8.1 days.
4. Sixteen per cent of cases came to operation. Ten per cent of these were conservative procedures such as cervical conization and cauterization and uterine suspension.
5. Two per cent of cases were associated with fibromata.
6. Four per cent of cases, radical surgery, was done for pelvic inflammatory disease.

III. OPHTHALMOLOGY

Dr. Ralph Rychener reports that in eight cases of trachoma, following Loe's instructions, there has been 100 per cent improvement. The results seem to be the best in old cases with numerous scars. Within one week of institution of treatment the secondary infection clears. In an adult eighty grains of sulfanilamide was given for the first two days, twenty grains four times a day. Sixty grains for the next two days, and forty grains for the next two weeks.

In chronic blepharitis he has employed the two and one-half per cent solution of neoprontosil, locally, as eyedrops, in four cases, with cure in all four.

He recites an interesting case of marked orbital cellulitis bordering on cavernous sinus involvement in a boy. His admission temperature was 103 degrees. The patient was delirious. The face was markedly swollen and the eye closed. Eighty grains of sulfanilamide was given the first two days; sixty grains the next two days; and forty grains daily for a week. Marked improvement occurred gradually with recession of the edema and swelling. The eyeball was saved. He has not used sulfanilamide in gonorrheal ophthalmia, as excellent results are obtained by older and established methods.

IV. OTORHINOLARYNGOLOGY

The Doctors Evans have concluded the following as the general use of sulfanilamide and its derivatives:

"There is a growing belief and, justly so, among otolaryngologists that the use of sulfanilamide and its derivatives in the treatment of ear, nose, and throat infections

should be limited to the severe and complicated cases. The ordinary infections are usually self-limited and specific therapy usually does not shorten or lessen the severity of the disease. In otology its use seems to mask the symptoms and, if used, the drug must be continued until there is a bacteriological as well as clinical cure. However, the brilliant results of its use in severe complications in deep tissues and body fluids is unquestioned."

V. ORTHOPEDICS

Dr. J. Spencer Speed, from the Department of Orthopedic Surgery in the University of Tennessee, and the Campbell Clinic communicates the following résumé:

"We have been using sulfanilamide and its various derivatives here in the clinic and at the John Gaston Hospital for several years, and we feel its chief value is as a bacteriostatic agent in the prevention of infection in potentially infected wounds, or wounds that have previously been infected, or in which a flareup of infection may be anticipated. For the last six or eight months we have been using sulfanilamide crystals placed directly in our compound fractures and compound fracture dislocations. This, in combination with the use of debridement and internal fixation, is followed by primary closure of the wounds unless there is an extensive soft tissue damage.

"Percentage of infections in compound fractures has been decreased and the functional results in these cases have been vastly improved by this form of treatment. We have been able to assume an aggressive attitude in the treatment of compound fractures which we would not have dared to do without the aid of sulfanilamide.

"Sulfamethylthiazol and sulfapyridine have also been used in connection with septic joints, and we feel that many joints which otherwise would have required surgical drainage have quieted down and the infection subsided without drainage.

"The following is a brief summary of the compound fractures we have treated with sulfanilamide and neoprontosil:

"We have treated approximately fifty

cases of various types of infection with these drugs, such as osteomyelitis, acute arthritis, acute bursitis, phlebitis, and intercurrent infection, but we are chiefly concerned here with those compound fractures which have been treated with the aid of these drugs.

"We have here a detailed report on fifty cases divided into three groups as follows:

"Group 1.—Fresh compound fractures (thirty-four cases) seen within twenty-four hours following injury. They had routine orthopedic treatment, consisting of debridement and fixation, followed by intensive sulfanilamide therapy. Ten or thirty per cent of these became infected. Four of the ten united solidly in an average of 2.7 months; three developed nonunions and three were amputated for gas gangrene. Of the remaining twenty-four, or seventy per cent, only three developed nonunion.

"Group 2.—Designated as latent or potentially infected cases that had previously had severe compound fractures. There were six cases, all reduced by open operation, four having internal fixation applied; the other two were maintained by plaster of Paris casts only. These patients received sulfanilamide preoperatively and postoperatively, and no infection developed in any of them. Five of these cases have already united in an average of four months. In the other case sufficient time has not elapsed to determine the end result.

"Group 3.—Consisted of ten cases with compound fractures and active infection which had persisted from three weeks to nine months. These cases had pyogenic infections and drainage from the site of fracture. They were all reduced by open operations; the devitalized tissues and sinus tracts were excised, also sequestra and previously applied internal fixation were removed. Internal fixation was used in eight of these cases and plaster of Paris casts without internal fixation in two. No infection developed in any of the ten cases. Nine of these cases have already united in an average of five months. The remaining case is too early for final report.

"We have placed sulfanilamide crystals in compound fractures in twenty-eight cases.

We have no final results compiled on these as yet, but the progress of these cases is excellent."

VI. UROLOGIC SURGERY

Dr. T. D. Moore, discussing urologic surgery and sulfanilamide, is quoted as follows:

"The oral administration of tablets of neoprontosil for its urinary antiseptic effect has been found more desirable and equally effective as sulfanilamide. The disagreeable by-effects are far less common; in this respect our experience coincides with that of Cooke of the Mayo Clinic, who reported that of 100 consecutive cases of urinary infections about twenty-five per cent were unable to tolerate sulfanilamide, but that only three per cent could not take neoprontosil. Many of those who could not tolerate sulfanilamide could take neoprontosil satisfactorily.

"In urological surgery for some months we have used neoprontosil almost routinely as a prophylactic against urosepsis, not only during the period of preliminary drainage in preparation for transurethral prostatic resection or prostatectomy, but also during the postoperative period.

"It has also been our custom to start an intensive course of the drug about forty-eight hours prior to a pelvolithotomy and in cases of hydronephrosis in which a conservative plastic operation is planned. Of seventy-eight consecutive cases of prostatic obstruction, transurethral resections were performed on seventy-six and two were subjected to a primary suprapubic prostatectomy. In the great majority of these, the convalescence was characterized by an absence of rigors, fever, and other evidence of urinary sepsis formerly so commonly seen in these cases. A similar absence of severe urinary infection upon the removal of stones, either by pyelotomy or nephrotomy, in seventeen cases was noted. In six instances of plastic surgery involving the renal pelvis there was not an instance of severe urinary infection which we believe may be attributed largely to the use of neoprontosil as a prophylactic. In cases where nausea or vomiting prohibits the oral

use of the drug, it has been administered parenterally as a five per cent solution, but it has been our impression that it is somewhat more effective if the tablets can be given orally."

VII. GENERAL SURGERY

In general surgery problems have been approached in several ways. For instance, in the chemotherapeutic attack upon the ruptured appendix, in one group of cases sulfanilamide was used intraperitoneally in amounts varying from twenty to thirty grams. In another group it was used intraperitoneally and intramuscularly in one-half gram doses every six hours. In still another group, appendiceal abscess, it was employed by mouth and intramuscularly when it could not be taken orally. Neither the subcutaneous route, as advocated by Ravdin, Rhoads, and Lockwood, nor the rectal route, as reported by Marino, et al., has been used in this series. Sulfamethylthiazol and sulfathiazol have been used in staphylococcic infections in a few cases with surprisingly good results. In the latter cases only the oral administration has been employed. In erysipelas miraculous results have been obtained with sulfanilamide orally.

Presenting a brief outline merely of the work done on the university services at the John Gaston Hospital and the Baptist Memorial Hospital, there are forty-three cases of appendicitis with rupture.

APPENDICITIS WITH RUPTURE

	Cases	Recoveries	Deaths
(J.G.H.) Rupture with local peritonitis -----	14	14	0
(B.M.H.) Rupture with local peritonitis -----	2	2	0
(J.G.H.) Rupture with generalized peritonitis -----	14	13	1*
(B.M.H.) Rupture with generalized peritonitis -----	2	2	0
(J.G.H.) Appendiceal Abscess —operated upon -----	4	4	0
(B.M.H.) Appendiceal Abscess —operated upon -----	2	2	0
(B.M.H.) Appendiceal Abscess —not operated upon -----	5	5†	0
	43	42	1

*Died upon sixth postoperative day. Autopsy revealed multiple lung abscesses and advanced bronchopneumonia.

†Discharged apparently resolved. To return in three months for interval operations.

Mortality rate, 2.3 per cent.

(J.G.H.) Cases received local intraperitoneal and incisional sulfanilamide packs.

(B.M.H.) Cases received local, incisional, and intramuscular sulfanilamide with oral administration whenever possible.

Dr. J. Gordon Dees, resident surgeon at the John Gaston Hospital, and Dr. George Gish, resident surgeon at the Baptist Memorial Hospital, who carefully supervised these cases, report that the wounds heal with very little induration about the edges—an apparent absence of severe inflammatory reaction as usually noted in draining incisional wounds. They also noted the absence of foul, profuse, brownish, purulent drainage—that the drainage is thin and odorless in the majority of cases, and gray in color. In the five appendiceal abscesses not operated upon, they were all discharged after apparent complete resolution and temperature free for one week; to return in three months for the interval operation. In but one of the series did a fecal fistula develop and it closed in a few days. No case required ileostomy. Convalescence is smoother and more rapid. Rarely does the temperature rise over 101 degree in lysis.

Standard routines in adjunct therapy employed consisted of:

1. Maintenance of water, nonprotein nitrogen, and chloride balance throughout.
2. Wangensteen's duodenal suction-siphonage when indicated.
3. Morphine sulfate, by the clock, through the critical periods, one-fourth grain every four hours.

4. Blood transfusions every four to five days when parenteral ministrations of fuel and food were necessary.

Frequent red and white cell counts and hemoglobin estimations were carried out to anticipate any toxic effects of the drugs employed. Blood estimations of sulfanilamide revealed 14.5 to 17 milligrams per cent forty-eight hours after the sulfanilamide packs had been used intraperitoneally.

Where the mortality rate in appendicitis with rupture at the University Hospital was 11.6 per cent for the last five-year period, the mortality rate in this small series is 2.3 per cent.

Conclusions should not be drawn too hastily concerning the efficiency of sulfanilamide in combating but one or two of organisms complicating the usual case of ruptured appendix. It is apparent that it may be used with some assurance of success in many severe mixed infections of anaerobes and aerobes.

In the treatment of erysipelas from the isolation service of Dr. Gilbert Levy, fifty-nine cases of erysipelas were treated intensively with sulfanilamide orally during 1938 and 1939 with but two deaths, a mortality rate of 3.4 per cent. Cooke reports an excellent group of cases from St. Louis with a mortality rate of 15.1 per cent in the pre-sulfanilamide era.

The work of Garlock and Seley in prophylactically administering sulfanilamide orally in surgery of the colon and rectum should be highly endorsed. In twenty-one cases operated upon only one wound infection resulted. Convalescence was unusually smooth and uncomplicated.

In most elective surgery on the gastrointestinal tract sulfanilamide prophylactically is being used to a great extent in this sector. Garlock and Seley's oral method is being employed.

SUMMARY AND CONCLUSIONS

1. The place of sulfanilamide in surgery and the surgical specialties is discussed briefly.
2. A few series of cases in the various specialties are presented.
3. The uniformly excellent results obtained in the presented series speak eloquently for the future status of sulfanilamide and its allied compounds.

TECHNIQUES OF ADMINISTRATION

Oral.—One to one and one-half grains per pound of body weight, depending upon the severity of the disease, to be administered totally in thirty-six hours. The initial dose one-third of the total dose for thirty-six hours. The remainder to be divided into four-hour doses. After thirty-six hours ten to twenty grains every four hours for the next forty-eight hours. Ten to twenty grains every six hours thereafter until the disease is well under control. Then

five grains three times a day for from ten to fourteen days.

Intramuscular.—One-half gram (approximately) every four to six hours, depending upon the severity of the disease. This dosage is equal to ten cubic centimeters of the five per cent solution of neoprontosil (Winthrop). It is continued until oral administration can be substituted.

Local.—Twenty to thirty grams of sulfanilamide (Prontolyn-Winthrop) in the form of a pack. A vaginal pack, moistened with normal saline, is used, troughing the sulfanilamide in the pack, after thoroughly dusting the wound and the incision with a thick layer of the crystals. The wound is not sutured, being left wide open in the majority of cases after thorough packing. The pack is removed after four days and replaced if further treatment is indicated.

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DISCUSSION

DR. C. L. LASSITER (Chattanooga): I would like to say a few words about sulfanilamide in otolaryngology. The doctor quoted eminent authorities on the use of sulfanilamide in otolaryngology. I feel they are rather conservative in their use of it because he said that they feel inclined to wait until the more or less severe symptoms arise. I feel that sulfanilamide used judiciously early in more of the cases will prevent a great many of the more serious cases. Of course, it should be used judiciously. I feel that an otitis media of a rather severe type will discontinue its drainage much earlier if you use sulfanilamide than if you proceed to wash it with boric acid and do whatever treatment we formerly did.

I notice he said he had not used it in ophthalmology or in gonorrheal ophthalmia. I think there is one place that the drug is most beneficial—in gonorrheal ophthalmia.

In mastoid, it has been found that in a person saturated with sulfanilamide the X-ray will not show up the mastoid correctly if he is under big doses of sulfanilamide, and it must be discontinued for a day or two to let the X-ray show positive results.

It may be possible that in a mastoid with an extradural abscess or a paranasal abscess, your symptoms may be masked when he is saturated with sulfanilamide. It is necessary to be very careful about that. You may go on to meningitis or abscess under sulfanilamide when you are not aware of it, so you should be cautious in giving it, although the patients are comfortable.

DR. T. M. ROBERTS (Sweetwater): Do you mean that you use a solution in the eye?

DR. LASSITER: I give it internally.

DR. MORTON J. TENDLER (closing): I want to thank Doctor Lassiter for taking up the cudgels for Doctor Sullivan. He cannot be here today. I said very little on his subject purposely, so he might enlarge on it. Mastoiditis in our area, West Tennessee, is disappearing. Apparently the use of sulfanilamide as prophylaxis, as well as therapy, in early middle ear infections, has done considerable in aborting impending mastoid disasters.

Concerning gonorrheal ophthalmia, several of the ophthalmologists that I discussed the subject with speak as enthusiastically of the use of sul-

fanilamide as you do, Doctor Lassiter, but I specifically asked Doctor Rychener about that subject. He said they had not changed their methods much; that the older methods of treatment could not be improved upon. That is the only reason he has not used sulfanilamide in gonorrheal ophthalmia. He is associated with Doctor Ellett.

We have been using in general surgery what we call a sulfanilamide pack. We saturate a vaginal pack with normal saline, and in the vaginal pack we trough our sulfanilamide crystals, about twenty grams. In the wound itself, in the region of the marked inflammatory process, we dust very thickly the sulfanilamide crystals first and then pack the wound with sulfanilamide. It is in those cases that we have had a 14.5 to 17 milligram per cent blood concentration. It is well absorbed by the blood stream and acts not only locally, but also centrally. We believe that it is going to open up a new era in the treatment of appendicitis, particularly with rupture. The results we have obtained here in the few cases reported have not been repeated in that number of cases in the literature as yet, and we may be able to lower it even more than 2.3 per cent.

THE TOXIC MANIFESTATIONS OF SULFANILAMIDE AND ALLIED DRUGS*

FREDERICK E. MARSH, M.D., Chattanooga

Shortly after sulfanilamide was introduced as a therapeutic agent, it was found that certain toxic symptoms developed which could be attributed to the drug. These toxic manifestations are numerous, but fortunately very few fatalities have been reported. (If proper precautions are exercised in the care of the patient receiving this drug, the more serious manifestations will be detected early and measures to lessen the severity of the reactions can be taken.)

The following is an outline of the chief toxic manifestations with the usual time of appearance:

First Week.—(1) Cyanosis, (2) headache, (3) nausea, (4) giddiness, (5) weakness, (6) acidosis, (7) acute hemolytic anemia, (8) hemoglobinuria.

Second Week.—(1) Fever, (2) skin rash, (3) toxic hepatitis, (4) splenomegaly, (5) renal insufficiency.

Third Week.—(1) Slowly progressive anemia, (2) agranulocytosis.

Dizziness is a very common toxic symptom in the course of therapy with sulfanilamide, but is rarely noted in the patients receiving prontosil or sulfapyridine. This symptom is more frequent in ambulatory patients than in those who remain in bed during treatment. Certain patients complain of headache while they are receiving sulfanilamide. This symptom is a warning sign of development of drug fever, dermatitis, acute hemolytic anemia, and other toxic manifestations. Nausea and vomiting are common in the course of therapy with the drug owing to the central action of the drug. Diarrhea, generally associated with nausea and vomiting, may occur during treatment with sulfanilamide.

Mild mental disturbances are common in patients receiving sulfanilamide. Many individuals complain of feeling depressed, although occasionally the drug causes elation. Hallucinations, both auditory and visual, have been noted. Mania is rare, but has been reported; Hogan and McNamara have described a toxic psychosis which developed during treatment with the drug.

*Read before the Tennessee State Medical Association, Chattanooga, April 9, 10, 11, 1940.

Peripheral neuritis may develop, but is rare in the course of sulfanilamide therapy. Ornsteen has reported the occurrence of muscle tenderness, numbness, paresthesia, and partial loss of motor function of lower limbs in a man receiving large doses of sulfanilamide over a period of five weeks.

Anemia.—The anemia resulting from the use of sulfanilamide is of two types: (1) An acute hemolytic anemia which is characterized by a sudden onset with a marked drop in hemoglobin and red cells, jaundice, and disturbed liver function, or in severe cases of hemoglobinuria, marked reticulocytosis and leucocytosis. According to Bliss and Long, the development of anemia seems to bear no relationship to dosage, concentration of the drug in the blood or acidosis. The fall in hemoglobin was found to begin between twenty-four and seventy-two hours after beginning of treatment with sulfanilamide. W. B. Wood, Jr., reported twenty-one cases of acute anemia of whom thirteen required one or more transfusions. None of the patients died. Four of the twenty-one patients were later given the drug and three of them again developed acute hemolytic anemia.

The second type of hemolytic anemia is the slowly progressive mild type of anemia which develops after the drug is used over a period of several weeks. This type of anemia is characterized by a slow, but progressive drop in hemoglobin and red blood cells, a moderate reticulocytosis, and often a mild urobilinuria. This type of anemia is not to be feared and does not require a cessation of the drug. When the drug is stopped, there is usually a rapid regeneration of the blood.

Agranulocytosis.—Neutropenia and frank agranulocytosis are two of the most serious toxic manifestations of sulfanilamide therapy. The cases have occurred from six to thirty-five days after the drug was first started. Bliss and Long reported eighteen cases of agranulocytosis, twelve of which appeared after the drug had been given for seventeen days or longer. The mortality in this condition is about eighty per cent. The following case, which was treated on the medical service of Erlanger

Hospital, illustrates the course of events in a patient who developed agranulocytosis following sulfanilamide therapy: The patient was a white girl aged nineteen years. She was brought to the hospital, September 23, 1939, with a history of having a normal delivery on August 30, 1939. Four weeks prior to delivery she was put on fifteen grains of sulfanilamide three times a day for some type of urinary infection. She remained on this dosage for six weeks. Following her delivery she attempted to get out of bed on several occasions, but fainted each time.

Three days prior to admission to the hospital a red papular lesion appeared on the right hip; also several ulcers with a grayish membrane were found on the right tonsil, in the vagina, and on the cervix. The blood count revealed a hemoglobin of fifty-three per cent, red blood corpuscles 3,700,000, white blood corpuscles 600 with 100 per cent small lymphocytes.

The patient was given several small transfusions, pentnucleotides, liver extract, and large doses of thiamin chloride. However, the course was gradually downward and the patient died two weeks after admission to the hospital. Autopsy revealed bronchopneumonia, splenomegaly, and hepatitis.

Fever.—Bliss and Long state that fever may be the initial sign when a serious toxic manifestation such as hepatitis, acute hemolytic anemia, or agranulocytosis is developing. Fever constitutes one of the most important signs of warning in the course of sulfanilamide therapy and the drug should be stopped when fever develops.

Dermatitis.—The eruptions following use of sulfanilamide are of many varieties. They may be erysipeloid, erythematous, exfoliative, morbilliform, petechial, purpuric, scarlatiniform or urticarial in type. Fever and general malaise, leukocytosis ranging to 70,000 to 80,000 frequently accompanying the dermatitis. A peculiar feature of the skin lesions is that they are precipitated or made worse by exposure to sunlight and persist for a long time after withdrawal of the drug. Skin lesions occur with the same frequency in the course of

sulfapyridine therapy as has been noted for sulfanilamide.

Toxic Hepatitis.—In some cases of sulfanilamide intoxication, liver function may be disturbed. Bannick reported a fatal case of jaundice in the course of sulfanilamide therapy. Toxic hepatitis is accompanied by jaundice, liver enlargement, anemia, and exfoliative dermatitis. In rare instances ascites has developed. In most cases the prognosis is good.

Splenomegaly.—One of the features of a slowly progressive anemia which appears following sulfanilamide therapy is development of an enlarged spleen. The spleen extends two to five centimeters below the costal margin and remains enlarged three to five weeks after the blood has returned to normal. Rivington first called attention to the enlargement and engorgement of the spleens of animals receiving large doses of sulfanilamide and deposition of iron-staining granules in the cells of the splenic pulp.

Hemoglobinuria.—When acute hemolytic anemia develops, hemoglobinuria is often a feature. It is a manifestation of increased blood destruction. In the presence of acute hemolytic anemia the urine should be kept alkaline since the presence of an acid urine may cause precipitation of hemoglobin in the kidney tubules with obstruction and renal insufficiency.

Ravid and Chesner have recently reported a fatal case of acute hemolytic anemia and uremia during the course of sulfapyridine. The chief pathologic lesions were an obstruction of the renal tubules by hemoglobin pigment and hemosiderosis of liver, kidney, and reticulo-endothelial system. The clinicopathologic picture appears to be analogous with that encountered in deaths after transfusion with incompatible blood, in black water fever, paroxysmal hemoglobinuria and poisoning with certain chemicals.

Hematuria with visible blood is a symptom which is occasionally encountered in sulfapyridine therapy. With two of the cases reported there was severe abdominal pain of renal and ureteral origin and in one instance the pain simulated that of acute appendicitis.

SUMMARY

One encounters a wide variety of toxic effects from the use of the drug. (During the first week cyanosis, nausea and vomiting, and acute hemolytic anemia may appear. During the second week, fever, skin eruptions, and toxic hepatitis; and during the third week, agranulocytosis and a slowly progressive anemia may be evident.) Since many of the toxic manifestations come on suddenly all patients receiving the drug should be under the careful supervision of the physician so that proper treatment may be instituted early.

DISCUSSION

DR. J. C. PENNINGTON (Nashville): Mr. Chairman and Gentlemen: The orthopedic surgeons yesterday were making mention of the fact that they were the victims of state medicine to a certain extent. Up until recently the urologists have been the victims of drugstore and filling station medicine, for until recently in each filling station along the road there was a stock of condoms, lipsticks, cigarettes, and sulfanilamide.

Doctor Hinman of San Francisco recently made the statement that if a perfect urinary antiseptic is found by the medical profession, it will be a curse to humanity. In elaborating upon this statement, he explained that such a drug will be so full of attendant dangers that many people will suffer worse consequences than if they had not had the drug.

Doctor Marsh has thoroughly covered this subject, and I shall spend the few moments allotted to me mostly in emphasizing what he has said.

Since the advent of sulfanilamide therapy many compounds with a sulfanilamide base have appeared on the market. At present three are widely used, sulfanilamide, sulfapyridine, sulfanilyl-sulfanilamide, the last to be found on the market under the trade name of Disulon. Of these compounds, sulfanilamide is by far the most soluble and the most completely and rapidly absorbed. It follows, then, that the peak of the blood curve is obtained much more rapidly than in the case of the other two preparations. Similarly, its toxicity would appear to be high. It must be stressed that ambulatory patients are much more prone to toxic manifestations than are those kept under observation in bed.

My associate, Dr. Spencer Johnson, in a series of 112 ward patients with acute and subacute gonorrheal urethritis and its various complications treated with large doses of sulfanilamide, eighty to 120 grains in twenty-four hours, observed no serious reactions whatever. It is to be borne in mind that the employment of sulfanilamide compounds is not without damage to the kidney, as is manifested by the persistence of red blood cells in the urine during and after the course of treatment.

For this reason, a survey of the renal function is necessary before the administration of the drug, which is to be avoided if diminution of renal function is demonstrated to any marked degree.

A seldom mentioned deleterious effect of sulfanilamide and its allied drugs is their tendency to decrease spermatogenesis. It is interesting to note that McGinty and his associates at Emory University have avoided the unpleasant symptoms which so often accompany sulfanilamide therapy, particularly the mental depression, by the administration of nicotinic acid. The porphyrin excretion by the urine resulting from sulfanilamide therapy is therefore greatly reduced. Methylene blue has been used successfully to prevent sulphemoglobinemia and methemoglobinemia as first suggested by Doctor Wendell of the University of Tennessee. The administration of sulfapyridine and sulfanilyl-sulfanilamide is attended by fewer toxic manifestations than that of sulfanilamide. In particular, the milder toxic manifestations are far less frequent, while the allergic manifestations, as fever, rashes, asthma, angioneurotic edema, occur about as often.

Alyea and Daniel have found that the more serious toxic manifestations of sulfanilamide therapy; that is, agranulocytosis and acute hemolytic anemia, are seldom seen during sulfanilamide therapy and are not at all seen during the employment of sulfanilyl-sulfanilamide.

Sulfapyridine has been seen to cause severe gastrointestinal disturbances which have not been noted with any frequency nor in severe degree when the other two drugs have been employed. Long believes this toxic manifestation to be of central origin. Increasingly frequent instances of renal lithiasis, in some cases so severe as to produce complete anuria, have been reported during the employment of sulfapyridine. This phenomenon has not been reported as having accompanied the employment of the other sulfanilamide products.

Lately, the employment of sulfanilyl-sulfanilamide has been observed to produce peripheral neuritis of varying severity in an appreciable number of cases.

From this brief survey, then, it is obvious that while these three drugs comprise potent chemotherapeutic agents, they certainly cannot be administered with impunity, as their potential hazards are manifold and varied.

In closing, I wish to lay special stress on these facts:

1. Some of the sulfanilamide products will cause serious kidney damage.
2. They will prohibit spermatogenesis and thus produce sterility.
3. They are in some instances capable of causing renal stones.
4. Peripheral neuritis may result from their administration.
5. These drugs are best tolerated by patients in bed.
6. Lastly, and most important of all, sulfanilamide and its kindred drugs should be regarded as potentially dangerous, and should never be administered except under the careful supervision of an alert physician who is acquainted with the signs and symptoms of approaching danger.

DR. JAMES L. BIBB (Chattanooga): I want to thank Doctor Marsh for his very fine paper. I would like to ask him a question. Isn't it a fact that in the use of sulfanilamide all of the beneficial effects come within the first six, possibly eight, days? Therefore, it seems to me that we should be particularly careful to cut our drug down at that time.

One issue of the *American Medical Association Journal* gave an account of the death from agranulocytosis of three patients, and if you read those case histories, you would see that all of them had sulfanilamide for a period of over three weeks. Therefore, let us not abuse a wonderful drug.

It has been definitely proven that if a person has trouble with sulfanilamide he is going to have trouble with sulfapyridine. Therefore, in the first day of pneumonia it seems wise to me to question your patient and see if he has had this other drug, and a large percentage of our people have had it. If they have had sulfanilamide with somewhat disastrous results, why not type your patient right away? You may not have to use serum, but after you have had sulfapyridine for twenty-four or forty-eight hours and have had to give it up you know how hard it is to get your typing correctly. Therefore, in all of our pneumonias, routinely, it would be much better if we typed them as soon as we see the case, even though we do not have to use the serum.

DR. F. E. MARSH (closing): I appreciate Doctor Bibbs' remarks. I hardly know how to answer his question, but I feel that in some cases we do have to continue the drug, and in those cases I think it can be used safely if the patient is kept under constant and careful supervision.

GASTRITIS*

JACK WITHERSPOON, M.D., Nashville

Gastritis is an inflammatory disease of the lining mucous membrane of the stomach and may be acute, subacute, or chronic.

Our present interest is in the various types or grades of chronic gastritis.

The introduction and very general use of the flexible tube gastroscope has, in a very few years re-established the disease in popular interest, and perhaps added another acceptable diagnosis for functional or nervous indigestion.

Acute gastritis is a condition long accepted as resulting from corrosive irritants, such as accidentally swallowed lye, or poorly diluted alcohol. It occurs in toxic food poisoning.

Beaumont saw it also when his patient had eaten recklessly or when he had a fever.

The inflammation may involve the whole interior of the stomach, or it may be limited to the antrum, or the body alone, or it may be in small patches surrounded by perfectly normal appearing mucosa.

More than 100 years ago William Beaumont, a young American army surgeon, was stationed in an outpost in Michigan. In 1822, a twenty-year-old French-Canadian fur trapper was wounded in the left side of the abdomen and chest by the accidental discharge of a musket almost against his body. Doctor Beaumont attended him and found some ribs shot away, and part of the lung and some abdominal viscera exposed in the wound. After many months' effort, as shown by his daily notes, the patient was left with an open gastric fistula, through which digestive juices and aliment, as he called it, escaped.

After the doctor despaired of closing this opening, and more than a year after the man was hurt, he began to collect some of the digestive juices and look into the stomach and make notes on the nature of digestion.

He found that the digestive fluid contained water, hydrochloric acid, acetic acid, saliva and mucus, and some other ferment

for dissolving meat. He noted that the lining of the stomach was at times pale, and at times red and angry looking, sometimes flat, and sometimes turgid and swollen. He watched the dry mucosa begin to secrete digestive juice on the anticipation of food. He noted that the mucosa became red and dry in the face of a fever, and that his subject would not eat; also, after heavy drinking bouts or reckless eating, there was inflammation.

His observations on gastritis were the first of the kind in this country, and attracted attention in all medical circles in this country and abroad. No improvement in his descriptions of the disorder, gastritis, was to come until the advent of the gastroscope two generations later.

Acute gastritis has been thought to occur in the early stage of certain infections and fevers, and recently the experimental giving of undiluted aspirin and cinchophen was observed through the flexible tube gastroscope to cause a zone of redness, dryness, and swelling about the tablet, and this later covered by a protective slime of mucus.

Other types of acute gastritis are corrosive gastritis, acute infectious or toxic gastritis, and phlegmonous gastritis.

Acute exogenous gastritis is presumably due to irritants contained in food. The symptoms are those of acute epigastric pain, sense of pressure in the upper abdomen, nausea, vomiting, occasional fever, prostration, diarrhea, and disagreeable taste.

Ilenning says the disease is most often not accompanied by symptoms, and gastroscopic evidence of the disease remains for days after all symptoms have disappeared.

The mucosa may soon, within a very few hours, regain its normal appearance, or it may appear to slough off shreds of mucus, leaving points of minute hemorrhagic areas on the surface.

H. E. Robertson of the Mayo Clinic says that in the otherwise normal stomach the most frequent pathological finding is hem-

*Read before the Tennessee State Medical Association, Chattanooga, April 9, 10, 11, 1940.

orrhage in the superficial layer of the mucosa.

He goes to some pains to show that by injecting the arterial trunk with some substance that will permit the capillaries to be visualized they will appear in the mucous membrane as an extremely thick network so numerous that, by dilating them with India ink, you will see that the surface resembles a solid mass of black substance.

Superficial mucosal hemorrhage occurs from any abnormal local congestion, from excess of food or drink, local infection, mental disturbances, fevers and anemias, and even the normal physiological stimuli of digestion may bring about a slight overdistention of any local area, and result in a rupture of one or more capillary loops.

Robertson further says that the inevitable results of this hemorrhage is necrosis of the involved part. Digestion of the necrosis leaves a tiny ulcer, which is promptly repaired with complete restoration of the mucosa.

"In most instances the whole process is without a single discoverable sign or symptom unless gastroscopy, etc."

Under the mucosa, however, are found a collection of lymphocytes. Round cells may be found in clumps even invading the muscularis mucosa. In advanced inflammations and under ulcers the muscularis mucosa and even the muscle layer may show compact strands of fibrous tissue. The glands also become disturbed and show hyperplasia and distortion.

Chronic gastritis occurs when acute gastritis fails to resolve, and, like chronic cystitis, becomes a fixed disease.

Schindler classifies it as chronic superficial gastritis, atrophic gastritis, hypertrophic gastritis, and gastritis of the post-operative stomach.

This classification is pretty generally accepted by those working with the gastroscope. It lends itself to a description of the observation made, and can be modified by such terms as catarrhal, edematous, hemorrhagic, ulcerative, or erosive. Until the introduction of the flexible tube gastroscope, as a means of viewing the interior of the stomach, few studies had been done

in this country on chronic gastritis. Chronic gastritis was occasionally seen in portions of freshly resected stomachs. Konjetzny, Knud Faber, and Judd believed that chronic gastritis was a forerunner of pernicious anemia and stomach cancer. If, as claimed, cancer does develop only in a stomach previously afflicted by chronic gastritis, the recognition of this state becomes more important.

The changes in the stomach seen in the autopsy room were thought to be due to post-mortem digestion and disintegration.

The observations of Beaumont of 100 years ago were all but forgotten by all save a few historically-minded physiologists. However, his carefully-recorded observations on the appearance of the lining of the stomach of his servant, St. Martin, are a model for gastroscopists now. He noted the change in color, the change in secretion, the digestive juices, the mucus, the dryness, redness, edema, the blanching in health and in sickness, and especially after repeated drinking bouts the inflammation appeared and completely recovered.

Superficial gastritis is a mild grade of inflammation of the stomach, which may be attended by no subjective symptoms, or by no X-ray evidence. In the exudative or catarrhal type, the epithelial covering of the folds becomes altered, and the folds become swollen, with the valleys between bathed in a glarry mucus.

On the crests of some of the folds it appears as if the more superficial cells were eroded and show a red granular streak or such an area with adherent mucus.

Occasionally, the whole stomach is the site of such superficial change, but it is generally confined to small patches.

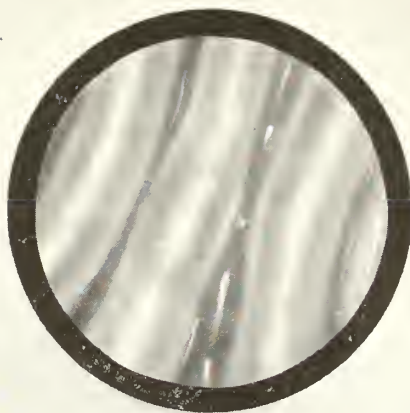
Mucosal hemorrhages are easy to recognize, and they may result in mucosal ulcers, or may leave only irregular specks of pigment.

Superficial gastritis may be confined to the pyloric antrum, as in the case of duodenal ulcer, or it may appear about the stoma of a gastroenterostomy, but it is most frequently seen about the lesser curvature of the body of the stomach.

The cause is as yet unknown.



1. Superficial gastritis with small mucosal hemorrhage.



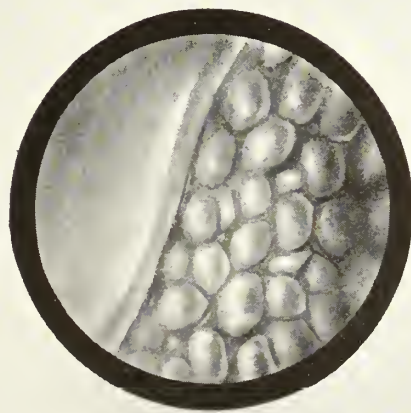
2. Chronic superficial gastritis with bloodstained mucus between the swollen folds.



3. Mucosal ulcer.



4. Chronic ulcer filled with exudate and marked by radiating folds.



5. Chronic hypertrophic gastritis.



6. Atrophic gastritis.

It appears in certain deficiency diseases as pellagra and chronic alcoholism. It may be induced by aspirin and cinchophen. It is probably present in certain stages of infectious diseases and certain fevers.

The symptoms most commonly complained of are weakness, loss of appetite, sense of heaviness or pressure, bloating, burning or soreness in the left upper abdomen. When the stomach is distended with air the patient complains of dull aching pain, or heavy sensations, much the same pain experienced after a full meal.

When the normal stomach is seen through the flexible tube gastroscope, the surface of the mucosa presents an orange red color.

According to Henning, the epithelial layer which covers all the surface is transparent and colorless, and the color of the mucosa is due to the rich blood supply in the parenchyma and the colors transmitted from the deeper layers of the stomach wall.

If there is any pathological change, such as proliferation or degenerative inflammatory process, the appearances are altered and the surface appears cloudy, or as a result of proliferation becomes granular, and loses its shiny appearance. As the inflammation becomes more severe the valleys between the folds are bathed in a thick mucus. The color of the mucus may vary because of the elements in it. It may be milky from debris, cells, or food remnants. It may be blood-tinged or bile-stained. It gives the whole surface a glazed appearance.

Swallowed mucus is distinguished in that it contains minute air bubbles, or slides across the surface with normal movements of the stomach. The small mucosal ulcers have sharply defined edges, and the base has a yellow or dirty grey center.

Mucosal hemorrhages are common and appear as bright, blood-red spots, seeming just under the surface.

These changes in the mucosa of superficial gastritis may linger for days or some weeks after the subjective symptoms have disappeared.

X-ray examination of the stomach, while superior in many ways to gastroscopy in the more gross changes, will hardly ever

give evidence of this type of chronic superficial gastritis.

Gastroscopy is not a rival of X-ray, but finds its place as a complementary means of examination.

Atrophic gastritis is a mucosal degeneration. It is an atrophy of the glandular part of the mucosa, and occurs in pernicious anemia, in combined cord degenerations, and in stomachs containing cancer.

Atrophic gastritis is a part of the picture of pernicious anemia, but it is also found many times when free hydrochloric acid is still present in the stomach. This is because it appears at times as a patchy disease and is surrounded by perfectly normal mucosa with functioning glands.

Only one-third of the cases of atrophic gastritis show absence of acid.

The more constant symptoms are epigastric distress with pain, fullness, heaviness, or burning. This distress is frequently immediately after eating, although it may be delayed and associated with nausea. The appetite is usually poor.

The general symptoms are weakness and fatigue, nervousness, sore tongue, vertigo, and numbness and tingling.

"Atrophic gastritis has not been encountered in any person who was entirely healthy."

Atrophic gastritis is a form of mucosal degeneration found in complete acholia, in pernicious anemia, and in stomachs containing cancer.

It is not at all dependent on the age of the patient.

Histologically, atrophy occurs in the glandular structure of the mucosa, and the mucosa appears very thin and presents a green, or blue, or grey appearance.

The cause of this color change is not understood, but the whole interior of the body of the stomach may show this greenish blue appearance, or the atrophy may occur in patches.

Gastroscopecally, the large and small blood vessels are seen shining through the thin mucosa when the stomach is well distended. This is the only type of gastritis in which the branching blood vessels are seen.

When adequate treatment with liver therapy or ventriculin is used in pernicious anemia, these atrophic patches may be seen to disappear and be replaced by more normal mucosa, even though hydrochloric acid does not return to the digestive secretion.

In atrophic gastritis, mucosal hemorrhages are not uncommon.

Henning says he has proven that the mucosa is no thinner in atrophic gastritis than in the normal stomach, but this is the appearance both by gastroscope and by X-ray.

Hypertrophic gastritis seems to be a disease unrelated to the other two mentioned.

The victim of chronic hypertrophic gastritis has symptoms suggesting the ulcer syndrome in that his discomfort is frequently related to the intake of food.

However, he is not relieved by food, and gets scant comfort from taking soda. He complains of left-sided soreness and aching, with sense of pressure under the left diaphragm.

He is given to swallowing air and belching. He is extremely nervous and has palpitation and weak spells that interfere with his work.

His stomach test shows acid sometimes in excessive amounts and usually occult blood.

The X-ray examination has long been recognized as diagnostic with ordinary barium meal. The borders of the stomach appear corrugated as if the stomach lining were thrown into finger-size folds.

At times, filling inequalities prompt the diagnosis of multiple polyposis.

When a thin barium mixture is used and pressure is exerted to produce a relief picture, the stomach shows irregular parallel lines running diagonally or near the long axis of the stomach.

The emptying stomach may present a honeycomb shadow.

Gastritis of the postoperative stomach is not a continuation of a previous gastritis, but occurs because of a badly acting stoma.

After gastroenterostomy or partial gastric resections, the stoma may be seen to open and close rhythmically like the pylorus, and these patients regain their health and

have little stomach complaint. In others a fierce gastritis develops with and without marginal ulcers. The gastritis is usually of the hypertrophic form and mucosal hemorrhages are common. The symptoms are those of ulcer, and are not to be relieved unless it is possible to undo the gastroenterostomy. This gastritis may be superficial or exudative, but it is rarely atrophic in character.

CONCLUSION

Chronic gastritis has become a clinical entity, and an important one, because of its role in the modification of gastric physiology and its relationship to the development of hematopoietic, ulcerative, and even carcinomatous diseases.

CASE REPORT No. 1

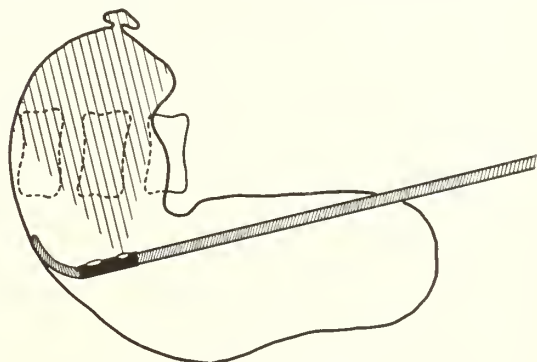
Mr. W. W., Petersburg, Tennessee, male, white, age twenty-seven. January 15, 1940. Hospital Unit No. 104474. Gastroscope No. 66.

In June, 1939, six months ago, noted easy fatigability, loss of weight and strength, attacks of dizziness, faintness, fluttering of the heart, shortness of breath and abdominal distention, fullness, sour eructations, belching with relief, but no actual pain, nervousness, and constipation.

Gastrointestinal series, no defect. Duodenal cap was rather spastic and emptied rapidly. No upper gastrointestinal lesion. Chest photo negative.

Clinical impression: Cardiac neurosis, functional hyperpnea.

Gastroscope: Fasting stomach contained forty cubic centimeters containing flecks of white mucus and free hydrochloric acid.



7. Schematic drawing of flexible tube gastroscope in air-filled stomach.



8. Hypertrophic Gastritis

An elliptical-shaped mucosal hemorrhage was found at the greater curvature near the junction of the body of the stomach and the pylorus. The pylorus and pyloric ring appeared normal. Two superficial erosions were found on the posterior wall of the body of the stomach.

Impression: Superficial gastritis with mucosal hemorrhage and erosion.

This patient was examined again three weeks and two months later with about the same findings.

CASE REPORT No. 2

Mrs. Neta G., Lawrenceburg, Tennessee, age thirty-five, female, white. June 19, 1939. Unit No. 99087. Gastroscopy Nos. 26, 71, 80, 82.

Severe gnawing epigastric pain eighteen years ago relieved by soft fluid diet. For next fifteen years occasional mild stomach pain controlled by diet and alkali. Three years ago gradual increase in pain with eructation and nausea. Much relief from ulcer regime, but stopped treatment several times with return of symptoms. One year ago return of severe symptoms. In Out-patient Department, May, 1939, X-ray showed duodenal ulcer, which did not respond to medical measures chiefly due to

patient's disturbed mental state and readmitted for consideration of surgery.

Gastroscopy No. 26, to rule out gastritis and normal mucus, reported; but after six months' ulcer treatment and no relief, patient again gastroscoped. Hydrochloric acid as high as seventy-five degrees with thirty cubic centimeters overnight retention in stomach, and marked superficial gastritis with irregular superficial erosions and mucosal hemorrhages, were found.

Two weeks later superficial gastritis and remnants of mucosal hemorrhage were again seen.

On February 16, a week later, a fourth examination was done and some evidence of healing could be determined.

CASE REPORT No. 3

Mr. J. O. H., Nashville, Tennessee, age forty-seven, nightwatchman, male, married. Gastroscopy Nos. 43, 50, 65. Referred by Dr. R. N. Herbert.

Epigastric cramping and vomiting in intermittent attacks for twenty years. Vomiting during meal or immediately after eating. Occasional eructations. Loss of weight was twenty pounds in past eight months. Six months ago, on change of employment and better eating habits, he gained ten pounds, but was never without pain, burning in the stomach, and an occasional knot in the epigastrium.

Physical examination showed only a thin, anemic man. No mass palpable in abdomen, but tenderness over epigastrium. Stomach contents showed total acidity eighty-five degrees, free hydrochloric acid sixty-five degrees.

X-ray examination, made in 1939 by Doctors King and Hamilton, showed large mucosal folds, irregularity of filling of the stomach. Diagnosis of polyposis or hypertrophic gastritis.

Reason for gastroscopy was suspected polyposis of the stomach.

On gastroscopic examination the pyloric mucous membrane was very normal. The pylorus muscle showed normal function and no rigidity. Opposite the angulus the greater curvature was roughened, the folds were very large, and areas of mucous mem-



9. Hypertrophic Gastritis

brane appeared crosshatched or cobblestonelike. Other areas in the same vicinity appeared normal. The rest of the body and the cardia resembled that part which was near the pylorus, which was normal.

The impression was areas of hypertrophic gastritis and advised brewer's yeast, antispasmodics, liver extract.

Re-examination in six weeks. Improvement resulted in six weeks and examination on September 15 showed a modified color less of the cobblestone appearance. Liver and ventriculin were given.

Examination was repeated in January, 1940. He had gained ten pounds in weight. This was attributed to his change of hours from nightwatchman's job to daywork, and two doses of liver extract a week, daily doses of brewer's yeast, and ventriculin were given.

DISCUSSION

DR. H. G. RUDNER (Memphis): Doctor Witherspoon has presented a subject that I have found most interesting. It is probably the final link in the rediscovery of a disease entity, chronic gastritis, that has been overlooked for so long, particularly in this country. It may prove to be an important link in our study of the problems of the chronic dyspeptic, the gastroneurotic, and the unimproved postoperative cases.

The study of patients with gastritis is important enough to require and to entirely justify the co-operation of the gastroenterologist, the radiologist, the gastroscopist, and the pathologist. We are convinced that no one of these alone, other than possibly a gastroscopist who is thoroughly experienced in this particular line of work, can make an absolute diagnosis. The clinician and radiologist can make presumptive diagnoses of chronic gastritis, but only one who is thoroughly acquainted

with the use of the gastroscope and has studied numerous normal and abnormal stomachs would be capable of making an absolute diagnosis. I am sure that the correlation of the clinical and X-ray studies plus gastroscopic examination will lead to an accurate diagnosis.

We are all agreed that gastroscopic examination is indicated in every patient who has a complaint of constant chronic gastric distress who has been thoroughly studied without finding any cause for either primary or secondary dyspepsia. A patient who has vague complaints with absolutely negative findings should be gastroscopied in order not to overlook a definite chronic gastritis or a lesion too small to be found by X-ray.

Patients with unexplained loss of weight, anorexia, and asthenia with negative X-ray studies may have chronic atrophic gastritis or carcinoma of the stomach. Patients with unexplained hematemesis or melena, although the X-ray studies are negative, may have small, shallow bleeding gastric mucosal erosions or purpura. Purpura is often recognized quite early by gastroscopic examination.

Atrophic gastritis is often found before blood studies have proven the presence of hyperchromic macrocytic anemia, and also chronic gastritis is found with subacute combined sclerosis of the cord.

Surely the presence of a high degree of neurosis does not exclude chronic gastritis because nervousness is one of the most common symptoms of the patient with chronic atrophic gastritis. Any patient who has an obscure abdominal complaint with a negative physical examination, normal laboratory findings, and negative gastrointestinal X-ray study should be gastroscopied before he is shelved as a neurotic or referred to a psychiatrist.

Instead of advising an exploratory laparotomy, "to see what is wrong," for a patient on whom it is not possible to make a diagnosis, even after thorough study, we should have the patient gastroscopied. If any type of gastritis is found, either chronic, atrophic, hypertrophic, or postoperative, this would eliminate the exploratory operation, unnecessary surgery would not be done, and both the patient and the surgeon would be spared the disappointment which would have resulted.

An increase in the general use of the flexible gastroscope will permit us to have more thorough and frequent studies of patients with chronic and atrophic gastritis. It is conceded that cancer of the stomach can be recognized early by this method. This will bring to the patient the advantage of early surgery, and the surgeon will get the case in time to do an elective operation.

DR. C. R. THOMAS (Chattanooga): On the basis of acute gastritis I think there is one factor that is very frequently overlooked, and that is the effect of extremely high temperatures. Those of

us who have had any experience at all with fever therapy, whether electric box or other types, know that these people frequently suffer from acute gastritis. A great many men who work in factories where they are subjected to high temperatures over a long period of time are apt to exhibit the same symptoms.

On the basis of chronic, and to a less extent acute, gastritis, it is found in practically all deficiency diseases whether they are of the clinical or subclinical type, that whole liver extract will in most instances bring about the desired result. This is true whether it is a hypertrophic gastritis or an atrophic gastritis, or whether or not there is any hydrochloric acid present in the gastric secretion.

I want to re-emphasize one thing that Doctor Rudner said. Being internists, naturally we want to avoid surgery as often as possible. There are a lot of cases of suspected carcinoma which would be saved unnecessary operations if they were sent for gastroscopic examinations first.

DR. RICHARD BARR (Nashville): I do not wish to disparage the value of the gastroscope and of gastroscopy, but if imprudent eating and imprudent drinking are the principal causes of acute gastritis, it looks to me like it must be a more or less normal condition, and we need not worry about the acute gastritis.

I was impressed with the fact that atrophic gastritis is supposed to precede cancer of the stomach and much stress placed on the symptoms of gastritis. We all know that temporarily at least a patient gets a tremendous amount of relief from all of his symptoms after a resection for cancer, and in pernicious anemia after proper treatment of the anemia, while there is not a restoration of gastric secretion, the patient still gets relief. There may be some change in the atrophic condition of the stomach, but certainly not a restoration of gastric secretion, and I wonder if we are not wrong in attributing the symptoms the patient had to the gastritis. The symptoms are probably symptoms of cancer and of pernicious anemia, not symptoms of chronic gastritis.

I was just wondering, too, if a fellow hadn't just about as soon have polyposis of the stomach as hypertrophic gastritis if nothing can be done for either one of the conditions.

Apparently our gastroscope so far is learning a lot of things, but not anything particularly curative. We may be avoiding some surgery, but I cannot exactly see the connection between the gas-

troscope and what might be called intelligent gastrointestinal surgery. I know a lot of people are operated on that should not be operated on, but almost anyone of moderate intelligence ought to be able to select the surgical cases without use of the gastroscope.

DR. JACK WITHERSPOON (closing): About fifteen or twenty years ago, when I first started practicing medicine, Doctor Barr opposed X-ray. (Laughter.) He finally came to where he admits the value of it.

DOCTOR BARR: Not guilty.

DOCTOR WITHERSPOON: I can prove that in about a minute.

I appreciate the discussion of Doctors Rudner, Thomas, and Barr, but I particularly thank Doctor Thomas for calling attention to the acute gastritis that occurred in these high temperature states. I suppose that it is the same type of acute gastritis that disappears quickly without leaving any signs. It may be that the stomach contents during the acute stage of gastritis would show some hemorrhage into the stomach—they probably would—but my interest is in chronic gastritis. Acute gastritis is rarely gastroscopied; it is a dangerous procedure in fact.

Doctor Barr disparaged the gastroscope because it is not a treatment instrument. It is only an instrument for the investigation of the stomach—inside the stomach. We cannot even see the inside of the esophagus nor the inside of the duodenum with the gastroscope. It is just a gastroscope. We can, though, get a pretty fair view of a great big surface of the inside of the stomach and a great deal of interest has been found in many, many clinics in this country in the last five years since the introduction of the use of this instrument and since it has been shown so definitely that it is a harmless procedure, very little more of a procedure to the patient than the passing of a stomach tube. It is an outpatient procedure. We can do about three of them an hour. The patients come into the clinic without breakfast and examination and observation is made. It is impossible to do any photography inside the stomach with this type of gastroscope, but what drawings can be made and what observations can be made are made at that time and the patient goes on about his work. It is no more of a treatment instrument than an ophthalmoscope. It is just an instrument for looking into the organ and trying to see if there is any information to be gained by observation.

REPORT OF THE DELEGATES OF THE TENNESSEE STATE MEDICAL ASSOCIATION TO THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION AT ITS ANNUAL MEETING IN NEW YORK, JUNE 10 TO 14, 1940.

To the House of Delegates of the Tennessee State Medical Association:

The undersigned representatives of the Tennessee State Medical Association attended the sessions of the House of Delegates of the American Medical Association at its ninety-first annual meeting in New York, New York, June 10 to 14, 1940, and submit herewith our report.

The speaker of the House of Delegates, Dr. H. H. Shoulders, Nashville, Tennessee, opened the proceedings of the house with his annual address, in which he stressed the fact that the greatness of the association was founded on its code of ethical principles and its democratic spirit.

Dr. Rock Sleyster in his presidential address pointed out the solidarity of the American medical profession and the growth of interest generally in medical affairs and medical science. He stated that during the past five years there has been a gain of 15,000 in the membership of the association in spite of adverse propaganda directed at the medical profession and its indictment on an antimonopoly charge by the United States government. He regretted that so many of the members know so little about the work of the headquarters, councils, bureaus, and departments of the association. He recalled that in the World War twenty-six per cent of the medical profession in the nation served with the armed forces of the United States and that the ratio of medical officers killed and dying of wounds was exceeded only by the artillery and infantry. Expressing confidence that the medical profession would pledge every iota of service of which it is capable, he called upon the House of Delegates to make to the federal government a suitable offer of the aid of the medical profession in its preparedness program. Deprecating the deteriorating influence of centralized government and regimentation of science, Dr. Sleyster restated the position of the association in advocating a free medical pro-

fession unhampered in its efforts to promote the public health by government regulation.

The president-elect, Dr. Nathan B. Van Etten, New York, calling attention to a world demoralized by a war provoked by the teaching and application of paganistic ideologies, cited the need of a strong resistance in the United States against these foreign influences. He declared the American Medical Association ready to cooperate with the federal government to the limit of its ability in all measures of national defense, and already had made available to the government all of its facilities. He warned that the organized profession of America may expect to descend to the low state of the physicians in Europe if in the stress of emotional excitement they succumb to regimentation under the plea of patriotism, social security, etc. While approving in principle the plan of President Roosevelt to build hospitals where needed, he sounded a note of warning that this may prove to be the first step in a larger plan to foist state medicine upon the nation. He declared it a responsibility of the medical profession to initiate programs to meet community health needs and to guide the health and medical phases of all programs for community betterment. Again he made a plea for the establishment of a national health department headed by a secretary of health in the president's cabinet for the correlation of all governmental health activities, a plan advocated by the American Medical Association since 1871.

Dr. Olin West, secretary, reported the membership of the association at 115,381 as of March 1, 1940, a gain of 3,171 members over the same date in 1939. At June 1, 1940, the membership had increased to over 117,000. He reported increased interest and activity in county and state societies and a greater interest by the public in medicine and its practice.

The Board of Trustees reported that the

association had a gross income from all sources for the year 1939 of \$1,798,766.82. This was \$114,798.77 greater than the expenditures for the year. The association employs 620 persons. The *Journal* of the A. M. A. showed net earnings for the year of \$706,823.02. The *Archives of Ophthalmology* produced income greater than the cost of publication. The *Quarterly Cumulative Index Medicus*, *Hygeia*, and all other special journals were published at a loss. Expenditures by the various bureaus and councils were greater than the previous year due to their expanded activities. Expenditures for legal services were increased over 1938 because of the indictment of the association by the United States Department of Justice on a monopoly charge and other suits against the association. The trustees reported the status of the indictment by the Department of Justice in the ruling of the Supreme Court that the case must go to trial, and notification just received that representatives of the association appear in court in Washington June 14, 1940, to answer to the charge. The trustees authorized the secretary to answer the summons, to enter a plea of not guilty, and reaffirmed their purpose to defend the association in this suit to the utmost, in accordance with instructions given by the House of Delegates. The complete report of the Board of Trustees, showing the financial transactions, the activities of the various committees, bureaus, councils, and departments and its publications was published in the May 11, 1940, issue of the *Journal* of the A. M. A. Those interested in these details are referred to this publication.

The treasurer reported invested and uninvested funds as of December 31, 1939, to be \$2,477,279.36. The net worth of the association at the same date was \$4,045,060.97.

In its report the Judicial Council suggested the need for examination of the constitutions and the by-laws of component county and constituent state medical societies as well as those of the American Medical Association with the view to removing conflicts that now exist in these instruments. The council did not think

this an opportune time to consider revision of the wording of the Principles of Medical Ethics.

The horrors of the war in Europe and its threat to the rest of the world cast a long shadow over the meeting. By a standing vote, the house adopted a resolution calling for "unwavering support of the president of the United States in his stand for national unity and organization in the emergency. . . . We admit the necessity of surrendering a measure of freedom under military necessity, but that freedom should be restored after the emergency has passed."

Lieut. Col. G. C. Dunham, delegate from the Medical Corps of the United States Army, presented a resolution providing a method for obtaining medical officers for the army. This resolution was amended and adopted.

The original resolution provided that specialists would be classed according to the certification of the various specialty boards.

The amendment was to delete this provision and allow the Surgeon General latitude in classifying specialists on the bases of qualification as shown by membership in special societies, training, etc.

Addressing the house, Major General James T. McGee, Surgeon General of the United States Army, stated that the plan is designed to distribute the drain of medical talent evenly throughout the nation and to avoid taking necessary doctors from rural and isolated communities. The American Medical Association will furnish the facilities for this medical mobilization. Local and county medical societies will seek volunteers and determine those available for military service and those who, on account of age, physical disability, or civil obligations, should remain at home. Volunteers will be given buttons indicating that they are willing to serve. Qualified men for examination boards will be selected from physicians who are to remain at home. One or more officers of the medical department of the army will be on duty at the headquarters of the association. The association and state societies will provide rosters of those available from each state.

The house adopted a resolution presented by the Board of Trustees providing for the appointment of a committee of ten to serve as a committee on military preparedness to maintain contact and suitable relations with governmental agencies concerned with the health of the civil and military population of the nation so as to make available at the earliest possible moment every facility of the American Medical Association. Dr. Irvin Abell, Louisville, Kentucky, past president of the A. M. A., was named chairman of this committee.

Approval was voted of a resolution calling for cooperation of practicing physicians and health departments in venereal disease programs, the employment of physicians in private practice on part-time basis with pay to work in venereal-disease clinics as a part of such programs, and affirming that intravenous medication has potential dangers and should be administered only by qualified physicians.

Since it has long been held that heroin is not an indispensable medicine, a plea that some of the restrictions placed on the drug by the narcotic law was rejected.

A vote of appreciation was extended to the United States Senate and Senator Bilbo of Mississippi for their action in designating June 22 each year as "Doctor's Day."

The by-laws of the association provide that every three years a reapportionment of delegates be made according to the membership of each constituent state society, this action being due in 1940. As a result of this requirement the Tennessee State Medical Association was found entitled to two delegates for the next three years. In

recent years Tennessee has been entitled to three delegates.

The Distinguished Service Medal of the association for outstanding achievement in the art and science of medicine was awarded this year to Dr. Chevalier Jackson, Philadelphia. Other nominees for this honor were Dr. James Ewing, New York, and Dr. Ludvig Hektoen, Chicago.

The officers elected for the ensuing year were as follows:

Dr. Frank H. Lahey, Boston, Massachusetts, president-elect.

Dr. Parke G. Smith, Cincinnati, Ohio, vice-president.

Dr. Olin West, Chicago, Illinois, secretary.

Dr. Herman L. Kretschmer, Chicago, Illinois, treasurer.

Dr. Harrison H. Shoulders, Nashville, Tennessee, speaker of the House of Delegates.

Dr. R. W. Fouts, Omaha, Nebraska, vice-speaker of the House of Delegates.

Dr. Ralph A. Fenton, Portland, Oregon, and Dr. James R. Bloss, Huntington, West Virginia, were elected to succeed themselves as trustees. Dr. William F. Braasch, Rochester, Minnesota, was elected a trustee to fill out the unexpired term of Dr. Charles B. Wright, deceased.

San Francisco, California, was designated as the place for the meeting of the association in 1943, the house having previously selected Cleveland, Ohio, for the 1941 session and Atlantic City for the 1942 meeting.

Respectfully submitted,

H. B. EVERETT

E. G. WOOD

JOHN M. LEE

THE JOURNAL

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TENNESSEE STATE MEDICAL ASSOCIATION

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H. H. SHOULDERS, M.D., Editor and Secretary

AUGUST, 1940

THE ISSUE

SHALL PATIENTS AND DOCTORS RETAIN THEIR FREEDOM OF JUDGMENT IN THE MATTER OF MEDICAL CARE, OR SHALL THIS FREEDOM BE SURRENDERED TO SOME GOVERNMENTAL AGENCY?

EDITORIAL

THE BASIC SCIENCE BILL

On another page of this issue of the JOURNAL will be found the Basic Science Bill, together with a discussion of its provisions, which has been prepared by the legislative committee of the association.

Reprints of the bill and the discussion have been mailed to the officers of all county societies.

It is very important that this bill be enacted into law by the legislature which convenes next January. It is important for one principal reason: Tennessee is becoming the dumping ground for all sorts of quack healers. This is due to the fact that our standards of requirements are insufficient at the present time.

The Basic Science Bill has been the most effective measure that has ever been devised and adopted for the protection of the public against the hazards of quack medical care.

The committee of the association can

exert its utmost efforts with the legislature after it has been assembled and fail to accomplish the result sought unless work is done by the constituents of senators and representatives.

Each representative who comes to the Assembly represents the people in a county, or district, and he is not interested in a legislative proposal, unless the people of his district are interested in the proposal. It is, therefore, necessary and vital, that members of the medical profession inform themselves with reference to the bill in order to make an intelligent discussion of its provisions. It is also necessary that members of the medical profession see their representatives and senators before they come to Nashville, acquaint them with the bill and obtain their support of it. When this has been done the legislative committee can accomplish its work here. Unless this is done the committee cannot do its work here.

THE COMMITTEE ON MEDICAL PREPAREDNESS OF THE AMERICAN MEDICAL ASSOCIATION

Since the meeting of the American Medical Association in New York, in June, the Committee on Medical Preparedness has been very active.

A study of the medical resources of the country is now in progress. Every doctor in the state whose name and address is known has been furnished a form on which to supply certain information to the committee. This information will serve as the basis for conclusions and actions as to what steps should be taken in the event of an emergency to meet the medical needs of the army, the navy, and the civilian population at the same time.

It is recognized that unnecessary hardships were experienced during the first World War because such studies were not conducted.

Every doctor will please fill in the form and mail it at once.

WHICH PATH

Under the above caption the following statement appeared in the *Boston Post* for November 7, 1938:

"Which Path

"Referring to Arnold's recent speech in New York, Father White asked: 'What will be the future path? Which course will America take, mindful of her founding, her constitution, her guarantee of liberty, and her established tradition as a Christian nation?'

"Will it be the startling course marked out for the nation in a sensational address last week by the erstwhile mayor of Laramie (population 8,000) now Assistant Attorney General of the United States (population 125,000,000), who emerged from his 'cave of winds' and the words to shock the nation with his pagan proposal? The address was given at the Waldorf-Astoria on October 26, as reported in the *Brooklyn Tablet* of October 28, and confirmed by the press release of the *New York Herald-Tribune*, under whose auspices the forum was held.

"A Pagan State

"Thurman Arnold said, 'The state must have its established church. . . . Every organized state must have its established church or, as I have expressed it elsewhere, its folklore. That church must embody the fundamental truth and principle which give the state its greatness. At the same time that church must not impose ridiculous unnecessary sacrifices on the great mass of the people. The fact that today the established church of the modern state is legal and economic, promising security for this life rather than for the hereafter, distinguishes us from the Middle Ages.'"

The Mr. Arnold, who made the statements quoted above, is the Assistant Attorney General of the United States whose activities obtained the indictment of the American Medical Association, and this indictment of the American Medical Association is to be interpreted by the medical profession as an indictment of every member of the American Medical Association because the issue involved, in its final analysis, is whether or not medicine can exist as a profession independent of dictation by the government.

Much more may be involved in this issue than is commonly thought. One can draw

a parallel between this particular event and some events which took place in the European countries, which now have a totalitarian government. On the road to dictatorship the leaders destroyed independent organizations of various sorts. In some instances, they went so far as to destroy religious organizations.

It is evident that Mr. Arnold visualizes a state which is nothing short of dictatorship, even in affairs religious.

If the above statement had been made by the leader of a fascist or communistic organization, we would not have been astonished. The thing which attaches tremendous significance to the statement is the fact that it was made by a man who occupies a very important position in the government of the United States.

The powers attached to the office held by Mr. Arnold enable him to direct the use of these powers to such ends as he may choose. If he so chooses, he may use them toward the establishment of a totalitarian government. His utterances and his acts furnish ground for serious thinking.

CLINICAL RESEARCH IN CANCER

As is well known, the American College of Surgeons appointed a cancer committee in 1922. As a result of the activities of this committee, interest in the subject of cancer has been enhanced a great deal.

This committee is very anxious to obtain records of cancer cases from all sources, regardless of whether the author is a member of the college or not, to the end that a large amount of clinical data may be compiled and analyzed. Following is a statement by Dr. B. C. Crowell, which is self-explanatory:

To Fellows of the American College of Surgeons:

In 1922 the American College of Surgeons appointed a Committee on the Treatment of Malignant Diseases by Surgery, Radium, and X-rays (now known as the Cancer Committee). This committee collected and analyzed records of cases of cancer of the cervix and breast and published the results. In 1932 the college extended this phase of the work, and since then has accumulated

records of thirty thousand five-year cures of cancer of various organs. In the meantime the importance of accurate and complete records has been impressed upon the cancer clinics which have been established and upon the medical profession generally.

Surgeons, pathologists, and radiologists have cooperated with the college in the assembling of these records of end results.

It is now desired to add to the college cancer archives records of as many as possible five-year cures of cancer, and contributions to its cancer archives are again being solicited from surgeons and radiologists who treat cancer cases, whether in cancer clinics or not. Abstract cancer record forms have been evolved by the college, and their use is widespread. The use of these forms insures the recording of information that is essential for the purposes of clinical research, including an appraisal of methods of treatment. To be of sufficient value for clinical research the records should be furnished on the forms recommended by the college or their equivalent, and the college will provide such forms on request. The results of such analyses and studies of their cases as have been made by individuals, hospitals, and clinics will be a particularly valuable and welcome addition to the college archives.

The value of such a central depository of cancer records has been recognized by many national organizations, and the college is accepted as the appropriate institution to serve in this capacity. The college undertakes to classify, correlate, and study these records and make available the results of the study. For purposes of detailed study of special phases of cancer work, the records will also be made available to interested qualified individuals and institutions.

Large hospitals and clinics which treat many cases of cancer are requested to designate the appropriate individuals on their staffs who are especially qualified to present records of cancer of different organs as in such institutions the work may be exclusively departmentalized. In order that an analysis of the records may be made and an announcement of an impressive addition to our thirty thousand cures may be pre-

sented at the Clinical Congress of the college to be held in Chicago October 21-25, 1940, it is requested that the records be submitted for this year not later than September 15, 1940. From year to year this activity will be continued, and annual contributions will be solicited.

Very truly yours,

BOWMAN C. CROWELL

Associate Director

DEATHS

DR. REESE PATTERSON

Dr. Reese Patterson, Knoxville; University of Louisville (Kentucky), Medical Department, 1911; aged fifty-seven; died June 24, 1940.

DR. LARKIN SMITH

Dr. Larkin Smith, Nashville; University of Nashville, Medical Department, 1888; aged seventy-four; died July, 1940.

DR. B. VERNON DICKSON

Dr. B. Vernon Dickson, Covington; Memphis (Tennessee) Hospital, Medical College, 1901; aged sixty-three; died June 30, 1940.

RESOLUTIONS

IN MEMORIAM OF

DR. ANDREW FRANKLIN RICHARDS

Doctor Richards died June 14, 1940, after a short illness due to a failing heart. Most of his professional life of forty-seven years was spent in White County, Tennessee, among neighbors and friends who came to him for counsel on all subjects. His great physical strength served him well in his years of hard work in a mountain country during "horseback" days. Dr. Richards witnessed the introduction of asepsis in obstetrics and worked tirelessly to teach the principles to a rural people. Preventative medicine had a staunch friend and teacher in Dr. Richards.

Many honors were bestowed upon Dr. Richards by friends and coworkers in recognition of his work. He was a past president of the Tennessee State Medical Association and had also served as president of the White County Medical Society, the Five-County Medical Society, the Upper Cumberland Medical Society, and the Middle Tennessee Medical Society. Of the last four he was a charter member. Two years were spent in the medical service of the United States Army during the World War; four years were spent with the Tennessee Department of Public Health. Throughout his life, Dr. Richards sought better things for his state, county, and town.

To have known Dr. Richards was to know the true principles and practice of American medicine and its honorable traditions. White County and the state of Tennessee have suffered irreparable loss in the death of Dr. Richards, but we take great pride in his excellent record of accomplishment as it is written in the history of our county; an example and a challenge, the emulation of which will insure the future of Christian citizenship and high regard for the medical profession.

(Signed)

WHITE COUNTY MEDICAL SOCIETY
C. B. ROBERTS, M.D., *President*

NEWS NOTES AND COMMENTS

PHYSICIANS NEEDED FOR ARMY SERVICE

The physician, like every other American, has become actively interested in our national security and stands ready to contribute his services as required for military preparedness.

The immediate problem in this connection is one that concerns the War Department, and primarily the young physician. The War Department must procure sufficient additional personnel from the medical profession to augment the medical services of the regular army as the various increases are made in the strength of the regular army, as authorized by Congress to meet the partial emergency. The young physi-

cian is especially concerned because it is usually advantageous, and is often more convenient, for him to serve with the army.

Present plans of the War Department are designed to make service attractive and instructive for the young physician. If the physician holds a Medical Corps Reserve commission, he can be ordered to active duty if he so requests. If he does not hold a commission, but is under thirty-five years of age and is a comparatively recent graduate of an accredited school, he may secure an appointment in the Medical Corps Reserve for the purpose of obtaining extended active duty for a period of one year or longer. Duty is given at general hospitals, station hospitals, and with tactical units, and embraces all fields of general and specialized medicine and surgery. Excellent post-graduate training is obtainable in connection with aviation medicine. After serving six months of active duty in the continental United States, a reserve officer may request duty in Hawaii, Panama, or other United States territories and possessions. The initial period for duty is for one year, and yearly extensions are obtainable thereafter until the international situation becomes more clarified and our domestic military program becomes stabilized.

Many young doctors who have served with the army on extended active duty have taken the competitive examination for entrance into the medical corps of the regular army. Extended active duty affords an excellent opportunity for the physician to observe modern military medicine and the facilities that exist for a complete and comprehensive medical practice.

Pay is according to rank, and, including subsistence and quarters allowances for an officer with dependents, amounts to an annual sum of \$3,905 for a captain and \$3,152 for a first lieutenant; or, without dependents, to an annual sum of \$3,450 for a captain and \$2,696 for a first lieutenant. In addition, reimbursement is made for travel to duty station and return.

Further information may be obtained by writing to the Surgeon General, United States Army, Washington, D. C.

WINNER OF THE 1940 MISSISSIPPI VALLEY MEDICAL SOCIETY CONTEST ANNOUNCED

The third annual essay contest of the Mississippi Valley Medical Society "for the best unpublished essay on a subject of practical and applicable value to the general practitioner of medicine" has been concluded. The Annual Awards Committee has announced that John F. Casey, M.D., of Boston, Massachusetts, visiting physician, St. Elizabeth's Hospital, Boston, is the winner; F. Stanley Morest, M.D., Kansas City, Missouri, second; and Charles W. Pavey, M.D., of Columbus, Ohio, third.

The subject of the winning essay was "A Study of the Use of Sulfapyridine and Sulfathiazole in Pneumonia with Particular Reference to the Treatment of Pneumonia by the General Practitioner." His paper, and probably those of Drs. F. S. Morest and Charles W. Pavey, will be published in the January, 1941, issue of the Mississippi Valley Medical Journal, the Society's official publication.

The Mississippi Valley Medical Society essay contest has now been established as an annual affair, but the rules for the 1941 contest will not be available until December 1.

MEDICAL SOCIETIES

Davidson County:

The following papers are scheduled to be read during the month of September:

September 3—"Gastrointestinal Roentgenology: An Analysis of the Findings Over a Twenty-Year Period," by Dr. H. S. Shoulders. Discussion by Dr. Howard King.

September 10—"Fractures of the Shaft of the Humerus," by Dr. Duncan Eve and Dr. Rollin Daniel. Discussion by Dr. Robert R. Brown.

September 17—"Endometriosis," by Dr. Sidney W. Ballard. Discussion by Dr. C. S. McMurray. "Preoperative and Postoperative Treatment," by Dr. Alfred Blalock. Discussion by Dr. W. A. Bryan.

September 24—"Intestinal Obstruction," by Dr. H. H. Shoulders. Discussion by Dr. Theodore Davis.

Hamilton County:

The following papers are scheduled to be read during the month of September:

September 5—"Allergy and Ear, Eye, Nose, and Throat," by Dr. S. H. Long. "Anemias of Childhood," by Dr. O. L. Von Canon.

September 12—"Urinary Antiseptics," by Dr. G. Madison Roberts. "Flat Feet," by J. J. Killeffer.

September 19—"Nephroptosis; Review of Cases," by Dr. C. H. Barnwell.

September 26—"Obstetric Forceps; Lantern Slides," by Dr. E. F. Buchner. "Myopia," by Dr. Alvin H. Benz.

Robertson County:

At the regular meeting of the Robertson County Medical Society on July 16, Dr. R. H. Elder, Cedar Hill, read a timely paper on "Infant Diarrheas." Dr. A. R. Kempf, Springfield, led the discussion.

The physicians were guests of Dr. W. S. Rude at Ridgetop. Those attending the meeting were Drs. W. W. Winters, R. H. Elder, C. M. Banks, J. R. Connell, W. W. Porter, J. S. Freeman, A. R. Kempf, W. P. Stone, W. B. Dye, W. S. Rude, W. L. Gossett, J. E. Wilkison, and W. F. Fyke.

Dr. W. W. Porter, Springfield, will sponsor the August meeting of the society.

OTHER MEDICAL SOCIETIES

East Tennessee Medical Association meets at La Follette, Tennessee, on September 12 and 13, 1940. Among the guest speakers will be Dr. Willis Thompson, lecturer on pediatrics for the postgraduate course offered by the Tennessee State Medical Association, and Dr. John Shelton Horsley, Sr., of Richmond, Virginia. A full program is planned, with both scientific papers and demonstrations, and with social entertainment. There are plenty of hotel accommodations being made available for all who

wish to stay for the full two-day session. Wives of attending physicians are especially invited.

The nineteenth annual scientific and clinical session of the American Congress of Physical Therapy will be held September 2 to 6, inclusive, at Hotel Statler, Cleveland, Ohio.

There will be a separate scientific program covering eye, ear, nose, and throat subjects. Write for schedule, fees, etc., to the American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago, Illinois.

The sixth annual meeting of the Mississippi Valley Medical Society, "The Midwest's Greatest Intensive Postgraduate Assembly for General Practitioners," will be held at the Hotel Fort Armstrong, Rock Island, Illinois, September 25, 26, 27, 1940.

Further information may be secured from the secretary, Harold Swanberg, M.D., W. C. U. Building, Quincy, Illinois.

A MEETING OF UNUSUAL INTEREST TO ALL MEMBERS OF THE MEDICAL PROFESSION

On Tuesday, September 17, 1940, Bedford County Medical Society will be host to the Tennessee Division of the Southeastern Surgical Congress at Shelbyville, Tennessee.

This will be a busy one-day meeting, beginning promptly at 10:00 A.M. and closing at 4:00 P.M.

The Bedford County Medical Society will serve lunch to all visitors at 12:30.

This meeting will be different from the ones you are accustomed to attend. Very prominent authorities have been selected to appear on the program. Each of these men will present a subject, and the physicians of Bedford County will be present with patients, charts, and X-rays for demonstration. The leader for each subject will discuss each case in a more or less round-table fashion with the local physician to whom the case belongs; and each case will be open to the floor for questions, remarks, and discussion.

The leaders chosen to carry on at this meeting are:

1. Dr. E. T. Newell, Chattanooga, Tennessee.

2. Dr. B. T. Beasley, Atlanta, Georgia—"The Southeastern Surgical Congress Its Place and Purpose."

3. Dr. Edgar G. Ballenger, recent past president of the American Urological Association, Atlanta, Georgia—"Hematuria—Pyurea."

4. Dr. R. L. Sanders, immediate past president of the Southeastern Surgical Congress, Memphis, Tennessee—"The Peptic Ulcer Problems."

5. Dr. Irvin Abell, recent past president of the A. M. A. and now president of the Southeastern Surgical Congress, Louisville, Kentucky—"Problems of the Mammary Glands."

6. Dr. N. S. Shofner, Nashville, Tennessee—"The Thyroid Syndrome."

7. Dr. Troy Bagwell, Knoxville, Tennessee—"Management of the More Common Types of Fractures."

Dr. T. R. Ray, who is a past president of the Tennessee State Medical Association, is general chairman of arrangements. Dr. Herbert Acuff of Knoxville is president.

Every effort will be made to avoid dry lectures. It is the entire purpose of this meeting to get down to everyday problems which are faced especially by the general practitioner. This is not by any means a meeting for surgeons alone. It is a meeting at which specialists of all kinds and general practitioners can thrash out their common problems, and the meeting should be worth a great deal to each person in attendance regardless of what kind of practice he does.

COMING MEETINGS

American Association of Railway Surgeons, Chicago, September 16-18. Dr. Daniel B. Moss, 547 West Jackson Boulevard, Chicago, Secretary.

American Hospital Association, Boston, September 16-20. Dr. Bert W. Caldwell, 18 East Division Street, Chicago, Executive Secretary.

Kentucky State Medical Association, Lexington,

September 16-19. Dr. A. T. McCormack, 620 South Third Street, Louisville, Secretary.

Mississippi Valley Medical Society, Hotel Fort Armstrong, Rock Island, Illinois, September 25, 26, 27. Dr. Harold Swanberg, Quincy, Illinois, Secretary.

Southern Medical Association, Louisville, Kentucky, November 12-15. Mr. C. P. Lorz, Empire Building, Birmingham, Alabama, Secretary.

Tennessee Valley Postgraduate Medical Assembly, Knoxville, October 10 and 11. Dr. Jesse C. Hill, Knoxville, Secretary.

Tennessee State Medical Association, Nashville, April 8, 9, 10, 1941. Dr. H. H. Shoulders, Secretary.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By HUGH BARR, M.D.
Medical Arts Building, Nashville

Aspiration of the Respiratory Passages as an Aid in the Prevention and Treatment of Postoperative Pulmonary Complications. Urban H. Eversole. The Lahey Clinic. July, 1940.

Dr. Frank H. Lahey says in the introduction of this paper that we are deeply obligated to Dr. Chevalier Jackson and Dr. Gabriel Tucker for the development of suction bronchoscopy in postoperative pulmonary lesions. While at one time it was considered dangerous for stomach tubes to be introduced into a patient who had a high subtotal gastrectomy, they are now introduced upon the slightest suggestion of retention, and it is his opinion, as we become more accurate in determining early atelectasis, suction bronchoscopy is indicated.

Dr. Eversole states that postoperative pulmonary complications are an ever-present hazard confronting surgical patients. The majority of postoperative pulmonary complications are explainable on an atelectatic basis due to increased secretions. Contributory factors are elevation of the diaphragm which always follows opening of the abdomen, pain which decreases depth of respiration, and depression of respiration either as a result of medication or of surgical shock.

Suction bronchoscopy is not a formidable or hazardous procedure. Any patient who is unable to re-expand a collapsed portion of lung spontaneously or to raise fluid should immediately be submitted to this procedure. Atelectasis may be a collapse of an entire lung, one lobe, or one or more lobules. This condition is diagnosed by X-ray, respiratory embarrassment, cyanosis, and rise in temperature. The symptoms are promptly relieved by suction bronchoscopy. He reports a patient with

alarming symptoms due to this cause who became normal in thirty minutes after suction bronchoscopy.

DERMATOLOGY

By CLARENCE SHAW, M.D.
1021 Provident Building, Chattanooga

Syphilis in Mother and Child. Cole and Jeans in collaboration with Moore, O'Leary, Parran, Stokes, and Vonderlehr. Supplement No. 7 to Venereal Disease Information. United States Public Health Service, 1940.

The high incidence of prenatal syphilis, which is so frequently preventable, should encourage every physician and midwife to apply certain principles in the management of this problem. The prevention of prenatal syphilis depends upon three factors:

1. The recognition before the fifth month of pregnancy of infection with syphilis in the mother which antedated or coincided with the pregnancy (this implies the necessity for prenatal examination, including a serologic test for syphilis, in the first half of pregnancy).

2. The recognition of syphilis acquired during pregnancy (this implies the necessity of repeating the serologic test for syphilis at least once during pregnancy, preferably at about the seventh month).

3. The proper treatment for syphilis of all expectant mothers found to have a checked positive serologic test for syphilis.

Prenatal syphilis is a preventable disease: its prevention depends upon the routine, early, and repeated use of the serologic test for syphilis in every pregnant woman, and once the diagnosis is made in the mother, on adequate, early, and continuous treatment of the mother up to the termination of the pregnancy.

The pregnant syphilitic woman tolerates anti-syphilitic treatment as well as the nonpregnant woman or man; therefore, for the sake of the expected child, treatment should be as intensive as possible.

The treatment of the pregnant syphilitic woman should depend primarily upon the arsenicals because of their spirocheticidal effect, and the effort should be made to administer before delivery at least twenty doses of a trivalent arsenic compound. Treatment should be so planned that she will receive an arsenical in full dose for at least six weeks before delivery.

Treatment with an arsenical should be supplemented by the intramuscular injection of an insoluble bismuth compound; this should be given between courses of the arsenical if time permits, otherwise concurrently.

The treatment of syphilis in the pregnant woman is directed entirely toward the fetus, but the welfare of the mother as well as that of the child should be considered, and treatment individualized

to a sufficient extent to prevent untoward reactions. If the mother shows signs of being unable to tolerate the maximum treatment recommended for the majority of cases, it should be reduced until it is well borne.

OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.
Suite 234 Doctors Building, Nashville

Pregnancy Pyelonephritis in Relation to Renal Damage and Hypertension. E. Granville Crabtree and Duncan E. Reid. *American Journal of Obstetrics and Gynecology*, July, 1940, Vol. 40.

That a casual relation should be recognized between pyelonephritis and renal insufficiency and hypertension is indicated by recent publications. This interrelation is further confirmed by autopsy findings, which show either healed or still active pyelonephritic lesions in a high percentage of hypertension cases. In a survey of forty-five patients with pyelonephritis associated with pregnancy, evidence was produced through examination by intravenous pyelography, intravenous phenolsulfonephthalein excretion, concentration of the urine test, and tests for retention of nitrogen, to indicate that a high percentage of patients suffer appreciable damage to their kidneys which is demonstrable at from five to ten years after the infection. For the majority, adequate renal function is present at that time. In the patient in whom there has been both toxemic and pyelonephritic injury, the prognosis is grave. Hypertension was found to be present in all the patients where there has been both toxemia and pyelonephritis. Six patients with pyelonephritis showed blood pressure readings above 150/90, associated with some evidence of renal deficiency at that stage of the natural history of the disease. Renal injury, as demonstrated in this group, consisted of injury both to the conduction channels, pelvis and ureter, and to the cortex. When there is injury to the conducting channels, stasis of urine produced by this condition may further injure the cortex, especially when infection is still present. Stone occurred in five of the forty-five patients studied. Evidence of total renal deficiency was present at the time of examination in some proved unilateral cases. This finding suggested some other injury than bacterial invasion for the second kidney. It is the authors' impression that pyelonephritis of pregnancy should be looked upon as a progressive disease in many cases. Data have not yet been produced to indicate to what extent it shortens life. Some of the cases which were subnormal may have shown only the original damage and may not be in a stationary state. Sufficient evidence has been produced to indicate that the aim in treatment in pyelonephritis associated with pregnancy should be to minimize the initial injury and clear the infection as soon as possible.

OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.
Doctors Building, Nashville

Cyclodialysis with Insertion of a Metal Implant in the Treatment of Glaucoma; a Preliminary Report. M. Uribe Troncoso. *American Journal of Ophthalmology*, July, 1940.

A strip of magnesium was implanted in the wound between the ciliary body and the sclera. There was, at first, a mild reaction to the foreign body with numerous bubbles of free hydrogen appearing in the anterior chamber and under the conjunctiva. The reaction subsided in about one week, and the metal was entirely reabsorbed at the end of twenty days. The presence of the metal and the bubbles of gas prevented the reattachment of the ciliary body to the sclera, thus affording a new way for the outflow of the aqueous into the suprachoroidal space. Experiments on animals and microscopic sections have shown that a lacunar space is formed between the anterior chamber and the suprachoroidal space, ending in a thin scleral cicatrix. There is never a complete channel. Implantation of magnesium after cyclodialysis was made in twelve human eyes with subacute, chronic congestive, simple, or congenital glaucoma. In all but three cases previous operations had been done by other methods, several times with poor results. Clinical results were good in a majority of cases, in others there was improvement with diminution of hypertension, and in one case no improvement occurred. The method is harmless and can be repeated several times in the same eye.

PEDIATRICS

By JOHN M. LEE, M.D.
Doctors Building, Nashville

Treatment of Hypoprothrombinemia Haemorrhagica Neonatorum (Hemorrhagic Disease of the Newborn) with Vitamin K. Henry G. Poncher, M.D., and Katsuji Kato, M.D., Chicago. *Jour. A. M. A.*, 115:14 (July 6), 1940.

"More than 250 years has elapsed since the first case of hemorrhagic disease of the newborn was recorded in medical literature and a specific form of treatment was discovered." With this statement is introduced a resume of the literature detailing the discovery and development of the use of vitamin K in hemorrhagic conditions.

The basis of this paper is the report of the treatment and cure of twenty-two cases of this disease with vitamin K, all of which recovered. In all cases the prothrombin clotting time was determined before treatment and repeated afterwards. All cases had one or more of the following symptoms: hematemesis, sixteen cases; melena, eight cases; omphalorrhagia, eight cases; cutaneous

hemorrhage, three cases; cerebral symptoms, three cases; and hematuria, two cases. The symptoms appeared from twenty-four to ninety-six hours after birth.

The prothrombin clotting time before treatment was from 110 to 272 seconds, the average being 210 seconds. In twelve cases the prothrombin time was over five minutes. The average prothrombin time for all cases during the twenty-four hours following treatment was reduced to twenty-six seconds. In most of the cases the shortening of the prothrombin time was noted within two to six hours after receiving vitamin K.

In this study three synthetic preparations of vitamin K were used: (1) 2 methyl-1, 4 naphthoquinone (vitamin K_3), (2) 2 methyl-4 amino naphthol hydrochloride (vitamin K_4), and (3) solution of 2 methyl-1, 4 naphthoquinone in sodium bisulfite. The fat soluble preparation (1) was given by mouth, and the water soluble preparations (2 and 3) were given intramuscularly and subcutaneously. In all cases the clinical improvement was prompt and permanent, the effects being identical from all preparations. No blood was given intravenously or intramuscularly. Subcutaneous fluids were given where marked dehydration occurred.

The opinion is expressed that when the prothrombin clotting time is prolonged beyond two minutes by the micromethod, even in the absence of clinical symptoms, a state of vitamin K deficiency exists and replacement therapy is indicated.

The coagulation and bleeding times used in tests for hemorrhagic diatheses may be prolonged in conditions other than hypoprothrombinemia. It is essential therefore in order to make the diagnosis of hypoprothrombinemia, whether clinical or subclinical, to determine the blood prothrombin clotting time.

ROENTGENOLOGY

By FRANKLIN B. BOGART, M.D.
Medical Arts Building, Chattanooga

The Radiological Evidence of Malignancy in Bone Tumors and Its Relation to Biopsy. J. F. Brailsford, *Radiology*, Vol. 33, No. 4, p. 476, October, 1939.

Fourteen cases of bone tumors are reported in sufficient detail to illustrate many important diagnostic points. The following summary as written by the author contains all the essential facts presented in the paper:

1. The most important decision to make in the diagnosis of a bone tumor is whether the lesion is simple or malignant. In most cases, radiography affords the earliest and most useful information for this purpose without disturbing the patient or the lesion.

2. Few patients are presented for radiographic examination in the very early stages, for they appear to be in good health and apparently the

clinical signs do not suggest to the clinician a lesion serious enough to warrant an X-ray examination.

3. Simple tumors of bone present characteristic radiographic appearances which permit of their identification by the experienced observer.

4. Malignant tumors of bone in the early stages present variable but characteristic radiographic features.

5. The recognition of one of these typical appearances should be followed by an X-ray examination of the lungs and pelvis for the demonstration of possible metastases. The possibility that the bone lesion may be a metastasis from a primary carcinoma elsewhere should be considered.

6. No treatment should be administered until a complete radiographic record has been made. X-radiation when first applied tends to obliterate the evidence of malignancy in some cases.

7. When the lesion is malignant according to radiological examination and apparently operable, amputation should be performed as early as possible—it provides the best chance of cure we yet know. A prior biopsy merely to obtain histologic material would not help because it would accelerate the development of the local growth even if not the dissemination of metastases and provide material the histologic appearances of which may be misleading.

8. When from the radiologic examination the lesion appears simple and operable, surgery is indicated as the first line of action; local resection or curetting is indicated according to the operative findings. Malignant metaplasia has been recorded in several so-called benign tumors and other simple diseases of bone. The pathological tissue removed should be histologically examined and the case kept under observation, particularly if the pathologist suggested that the lesion was malignant.

9. When, according to radiographic or clinical examination, the lesion is inoperable, even though it appears to be nonmalignant in character, radiotherapy or other nonsurgical measures should be tried. Biopsy in such cases can serve no useful purpose and may introduce still further unpleasant complications on the unfortunate patient.

10. When the lesion is radiographically atypical, it should be immobilized (for trauma can only do harm) and studied by serial radiographs for a few weeks or months, depending on rapidity of change, while in the meantime the Wassermann reaction, blood and urine examinations are performed. If the lesion continues to extend and its nature remains indefinite, the chest and pelvis should be radiographed and, if negative, the effect of a moderate dose of radiation may be tried. If this is unsuccessful, resection or amputation should be performed according to the clinical and radiographic indications, and the material so obtained should be submitted for histologic examination.

Unfortunately it was in this group of cases that the histology was often difficult to interpret.

11. Only a small proportion of tumors of bone respond effectively to radium or X-radiation. As it is slower and less certain than amputation, it should be reserved for the inoperable and doubtful cases. A tumor which will respond effectively to such radiation will not require that the treatment be extended to its limits, to do so renders the patient liable to burns so painful that amputation for relief may be necessary even though metastases may be radiographically demonstrable.

12. Radium and X-radiation do not prevent the dissemination of metastases even though the primary tumor appears to have so favorably responded that the bone has practically recovered its normal appearance.

13. If biopsy is decided upon, the lesion should be accurately localized by radiography to insure that histologic material is obtained from the right place.

14. If material which has the macroscopic appearance of pus is found, this should be subjected to histologic as well as bacteriologic examination, because necrotic material in some malignant tumors presents this appearance and has led to the error of diagnosing an osteomyelitis.

15. The histologic appearance of a tumor and the tissue in its immediate vicinity are affected by radium and X-radiation therapy, trauma, infection, etc. Therefore, it is essential that the histologist should be informed of any therapeutic and surgical measures that have been employed and of their nature.

16. In view of the fact that identical histologic characters may be found in both simple and malignant tumors, classification by histology is liable to be misleading.

17. Only five per cent of some 1,500 cases of sarcoma registered by the American Registry of Bone Sarcoma were alive at the end of five years. This number I believe to be within the margin of error in diagnosis. Every case of unquestionable sarcoma I have seen on whom a biopsy was performed died within a few months. I have seen several cases which presented radiographic characters of inoperable neoplasm on whom no biopsy was performed and who were apparently cured by X-radiation. I have seen several cases having the radiographic characters of simple tumor which were treated surgically as such, i.e., by curetting or resection, and, though histologic examination by expert pathologists of the material removed indicated malignancy, the subsequent clinical history of sixteen years in one case proved the simplicity of the lesion.

18. It is impossible to judge of the malignancy of a tumor of bone by clinical examination at a stage when operative treatment is of any avail.

19. Good quality radiographs and a carefully taken clinical history are essential.

20. Cooperation between clinician, pathologist, and radiologist is essential for the best results.

UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.
By G. A. WILLIAMSON, JR., M.D.
307 Doctors Building, Knoxville

Sulfathiazole Treatment of Urinary Tract Infections.
Ormond S. Culp. *Journal of Urology*, July, 1940.

This article is a report of the results obtained in thirty cases of urinary tract infection treated with sulfathiazole at the Brady Urological Institute. These patients were divided into two groups. In the first group of twenty-four cases, an attempt was made to sterilize the urine. The youngest patient was nineteen and the oldest eighty-one years of age. Seventy-five per cent were over fifty years of age, many had had operation on the urinary tract. A great variety of organisms was noted.

Sulfathiazole was administered orally, at intervals of every six hours, and the fluid intake was not limited. The minimum duration of treatment was three days and the maximum twenty-seven days. The average daily dose varied from 1.9 to 8.7 grams.

The drug is excreted rapidly and almost entirely in the urine. A high urine concentration is more important than a high blood level.

Three patients who were cured had a blood level of less than one milligram per 100 cubic centimeters. High blood levels are more prone to cause toxicity.

Of the twenty-four patients in the first series, sixteen had sterile urine at the end of treatment, thirteen have had no recurrence after two to three months, three cases have had recurrence, one of which had a small calculus, and two chronic prostatitis with residual urine. Four patients with mixed infection had all organisms eliminated except gamma streptococcus fecalis, which organism appears more resistant to the drug.

Three patients could not complete their course of treatment because of toxic manifestations.

One patient proved a complete failure despite adequate treatment.

The types of organisms which were eliminated in this group were staphylococcus albus and aureus, proteus, escherichia, aerobacter, coccus xerosis, and streptococcus mitis.

In group two, six cases were given sulfathiazole only during the acute stages of pyelitis. No attempts were made to sterilize the urine because each patient had an indwelling catheter. However, marked clinical improvement and disappearance of fever were noted.

In the group of thirty patients treated with sulfathiazole, seven developed toxicity. No serious results followed in any of these cases. Three developed conjunctivitis, one developed dermatitis of the hands. Nausea and vomiting, mild anemia, and slight leukopenia were observed in one case each.

There was no evidence of hematuria or urinary suppression in any of the cases.

All toxic effects disappeared on discontinuance of the drug.

Some observers have reported sulfathiazole urinary calculi. None were observed in these patients, however, several had sulfathiazole crystals in the urine.

BOOK REVIEW

Simplified Diabetic Manual. Abraham Rudy, M.D., associate physician and chief of the Diabetic Clinic, Beth Israel Hospital, Boston, instructor in medicine, Tufts College Medical School; consultant in Diabetes, Jewish Memorial Hospital, Roxbury, Massachusetts, and Jewish Tuberculosis Sanitorium, Rutland, Massachusetts. With 163 international recipes (American, Jewish, French, German, Italian, Armenian, etc.). Introduction by Dr. Frederick M. Allen. Second Edition. M. Barrows & Company, Inc., New York, 1940. Price, \$2.00.

Of all the manuals on diabetes that I have read, this is the best. Dr. Rudy's style of writing is so clear, concise, and simple that one floats through the contents of this book with the greatest of ease—like the daring young man on the flying trapeze.

If anything that a diabetic patient should know has been left out, I have been unable to discover it. The manual is divided into two parts, the first part which deals with the principles of diabetes, expresses the indisputable facts concerning this disease in a language that can be readily understood by any patient.

Part two concerns itself with diets and is most complete. It contains chapters on weights and measures, food values, and the use of various foods in the diet. Besides, there is a large number of recipes that suit all conditions and occasions.

A diabetic patient can scarcely go wrong if he follows the advice given in this little book. I heartily recommend it for them, also for those physicians who have not made a special study of diabetes. It will at least permit them to know as much as do their patients.

E. R. ZEMP

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OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION SINCE 1830

Believing that some of the history of our Association will be of interest to the members we are planning to publish a list of the officers who have served the Association in the past. This month's issue will give the officers beginning in 1830. Each month's issue will carry additional names until the complete list of all the officers of the 110 years has been published.

1830-32. James Roane, Nashville, president; James King, Knoxville, vice-president; James M. Walker, Nashville, recording secretary; Lunsford P. Yandell, Rutherford County, corresponding secretary (resigned in 1831 and succeeded by James Overton, Nashville); Boyd McNairy, Nashville, treasurer.

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1848-51. The records of the meetings of 1847, 1848, and 1849 have not been found. The records of the meeting of 1850 indicate that Dr. John W. Richardson of Rutherford County, who presided over this meeting, had been elected president in 1849 for the ensuing two years. Dr. R. S. Wendel of Murfreesboro was elected recording secretary in 1850.

1851-53. John M. Watson, president; B. W. Avent, Murfreesboro, vice-president; E. D. Wheeler, corresponding secretary; R. S. Wendel, Murfreesboro, recording secretary; J. J. Abernathy, Decherd, treasurer.

(Continued in next issue)

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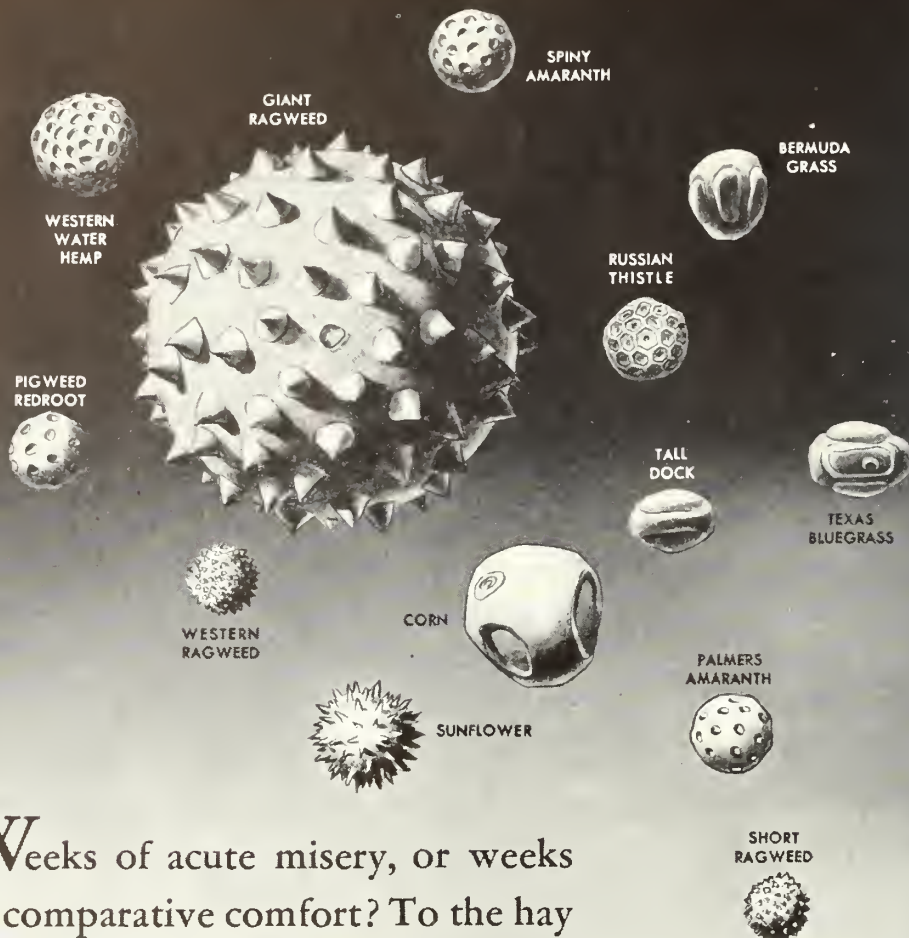
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ILLUSTRATIVE LESIONS ABOUT THE SELLA TURCICA AND OPTIC CHIASM*

NICHOLAS GOTTEN, M.D., F.A.C.S., Memphis

There are a number of conditions occurring about the sella turcica and optic chiasm that are of general interest to all practicing physicians. Some of these lesions produce rather striking physical and neurological signs, making them easy to recognize, while others have either deceiving or very few signs and symptoms.

Among the lesions of this region for this study, we specify the intrasellar tumors, suprasellar tumors, primary tumors of the optic chiasm, vascular tumors, such as carotid artery aneurysms and angiomas, inflammatory lesions; namely, abscesses and arachnoiditis; and finally, changes occurring secondary to pressure. It is the purpose of this paper to call attention to the signs and symptoms of a few of these lesions and illustrate with case reports, pointing out the features of each as well as the difficulties in diagnosis.

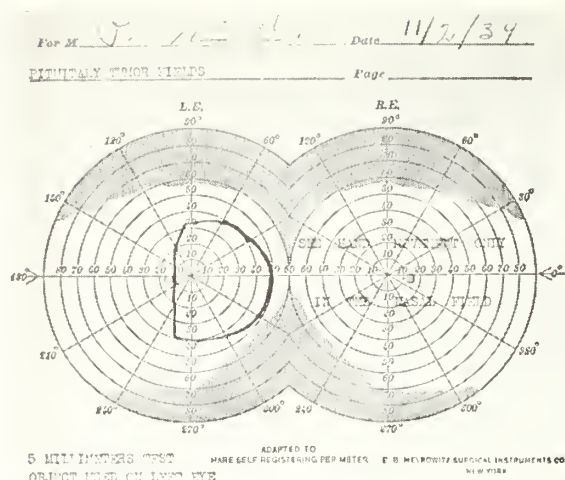
INTRASELLAR TUMORS

The majority of the tumors *within* the sella can be classified pathologically as adenomas. The earliest symptom of intrasellar tumor is failing vision (occurring in eighty-seven per cent), though the changes in the sella turcica itself may have begun quite sometime previously. The

visual change is usually a bitemporal hemianopsia, or no vision in one eye with a temporal hemianopsia in the other, while some few cases may be associated with a homonymous hemianopsia. A fundus examination shows varying degrees of optic atrophy and occasionally some choking of the optic disks. Headache is a common symptom of all lesions of the sella turcica regardless of the type. Other signs which may occur with the tumor are those of acromegalia if they are of the eosinophil type due to an excess of the pituitary growth hormone. Symptoms of hypopituitarism result from the suppression of the hormone and usually occurs in the chromophobe type. Associated with the hypopituitarism is lack of energy, loss of libido, adiposity, and a lowered basal metabolism.

The most prominent change found in the roentgenograms is the enlargement of the sella turcica, which is increased in size with erosion of the clinoid processes, and the bone may be completely destroyed. The treatment of such cases depends entirely upon the symptoms. When vision is failing, operation is indicated especially if it progresses in spite of X-ray therapy. If the visual defect is not severe, X-ray therapy should be instituted and no operation done unless visual changes do occur. An illustrative case is:

*Read before the Tennessee State Medical Association, Chattanooga, April 9, 10, 11, 1940.



P. M.—Visual field—pituitary adenoma.

Case 1.—P. M.

Chief Complaint.—Loss of vision and frontal headache.

Present Illness.—The onset was in May, 1938, when the patient noticed a gradual increasing loss of vision. About the same time he began to suffer from frontal headache which was worse at night. His only other complaint has been loss of libido for the past two years. The past medical history is negative.

Examination.—The patient was a well-developed and well-nourished middle aged male. The general physical examination was negative except for a moderate obesity. The blood pressure was 164 112. The positive neurological findings were a bilateral optic atrophy, almost complete blindness in the right eye, and a temporal hemianopsia with 20 200 vision in the left eye. The pupils reacted poorly to both light and accommodation. The serology was negative and the other laboratory tests were normal.

X-ray Examination.—X-ray examination showed extensive destruction of the sella turcica, including the clinoid processes and the floor of the sella.

Operation.—November 20, 1939, a trans-frontal craniotomy was performed and an intrasellar encapsulated neoplasm was located and evacuated.

Postoperative Course.—The patient's postoperative recovery was smooth. He was given X-ray treatment prior to dismissal from the hospital.

Histological Section.—The histological section showed the tumor to be a pituitary adenoma.

Follow-up Examination.—There has been no further loss of vision.

SUPERSELLAR TUMORS

The most common type of suprasellar tumor encountered in neurological clinics is the craniopharyngioma, otherwise known as Rathke's pouch or suprasellar cyst. This tumor arises from the pars tuberalis of the hypophyseal stalk and is therefore suprasellar in type. This tumor produces its symptoms by compression of the optic chiasm and the hypothalamus and by obstruction of the third ventricle. These tumors occur predominantly in children, and the symptoms are largely headache, vomiting, staggering gait, and failing vision. Because of the pressure changes exerted on the hypothalamus and hypophysis, there is frequently aplasia of the genitals and a failure in body growth. Occasionally diabetes insipidus occurs, which is a further indication of hypothalamic involvement.

X-ray examination reveals calcification of the tumor in eighty-five per cent of the cases. The treatment is entirely surgical in every case, inasmuch as it is necessary not only to save vision, but to relieve the internal hydrocephalus by evacuation of the cyst. The following case of suprasellar tumor illustrates the loss of vision, lack of growth, calcification within the tumor, and the evidence of increase in intracranial pressure.

Case 1.—D. J., a boy, nine years of age.

Chief Complaint.—Loss of vision.

Present Illness.—The patient was perfectly well until nine months ago, when he began to complain of headaches and afternoon elevations of temperature. About six months ago, his mother noticed that his vision was poor, and this condition has become progressively worse until he is now almost completely blind. He has had some ataxia and vertigo, but it is difficult to determine if this is due to blindness. The past medical history is negative.

Examination.—There is bilateral optic atrophy with practically no vision in the left eye and 2 200 vision in the right. The

pupils were dilated and reacted poorly to both light and accommodation. The remainder of the neurological examination was normal. The physical examination revealed a child, nine years of age, who had the appearance of a child of five. The genitalia was small and atrophic in type, but he was organically sound.

X-ray Examination.—The X-ray revealed a calcified tumor above the sella.

Operation.—December 20, 1939, a left-sided transfrontal craniotomy was performed. At the time of the first operation the optic chiasm was exposed with great difficulty because of the increase in intracranial pressure, even though the ventricle had been emptied. The optic chiasm was found to be pushed forward by an encapsulated tumor which could not be reached without applying extreme pressure upon the brain or else sectioning the left optic nerve. As a consequence, we decided to do the operation in two stages so that on December 23, 1939, the flap was again opened, the left optic nerve was sectioned, and the contents of the tumor very easily evacuated.

Postoperative Course.—The patient made a good postoperative recovery except for a transitory diabetes insipidus which persisted for about ten days. He was discharged from the hospital, January 1, 1940, and a follow-up examination, March 19, 1940, showed him to be in good condition with an improvement in his vision.

TUMORS OF THE OPTIC CHIASM

Tumors which involve the optic chiasm primarily are usually gliomas arising within that structure and are most commonly of the spongioblastic type. The symptoms of tumor of the chiasm are again primarily loss of vision. The loss of vision may be associated with optic atrophy or with choking of the optic disks. Gradually as the tumor grows, neighborhood symptoms due to pressure may occur, such as loss of the sense of smell, headache due to increase in intracranial pressure and symptoms secondary to compression of the hypothalamus. X-ray changes are enlargement of the optic foramen and erosion of the clinoid processes or erosion of the sella turcica. The fol-

lowing patient illustrates the syndrome, not only by the primary symptoms, but by associated pressure changes.

Case 1.—B. B. R., a woman, forty years of age.

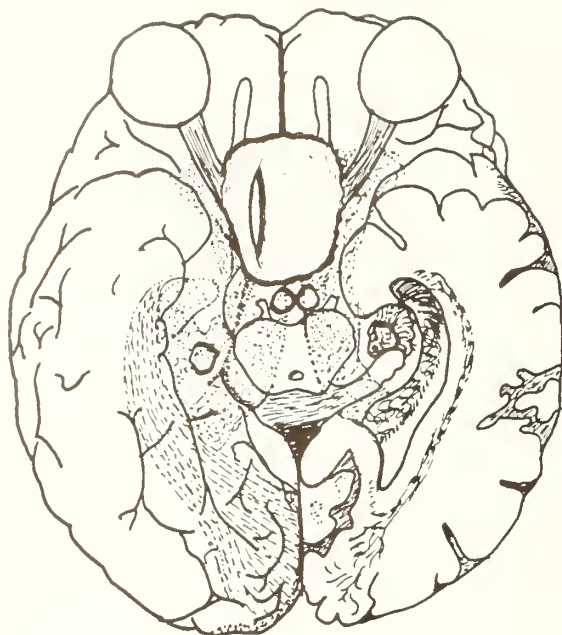
Chief Complaint.—Loss of vision.

Present Illness.—Patient began to lose her vision about nine months ago, and it has been progressive until the present time, when she can only distinguish light and hand movements. More recently she has noticed loss of the sense of smell, and she has occasionally had some pain in the right side of the face suggestive of a tic douloureux. Her previous health has been good.

Examination.—The patient was euphoric, and though it was obvious that she was acutely ill, she seemed to have no insight into her condition. She was almost completely blind with optic atrophy in the right eye and five diopters of choking in the left. There was a loss of the sense of smell, a



D. J.—Nine-year-old boy with supersella tumor. Stature and physique that of five-year-old child.



B. B. R.
Optic Chiasm Glioma
12-3-38

B. B. R.—Diagram of position of glioma of the optic chiasm.

decrease of all of the deep tendon reflexes, and a blood pressure of 220/130 as the only other positive findings.

Ventriculogram.—A ventriculogram was done which showed some enlargement of the lateral ventricles and an encroachment upon the anterior portion of the third ventricle. The sella turcica was eroded and showed destruction of the clinoid processes.

Operation.—December 3, 1938, a right transfrontal craniotomy was performed. When the bone flap was made the dura was so tense and under such great pressure that it seemed unwise to open the dura for fear of a rupture of the brain. A second stage operation was done on December 6, 1938, a cannula having been left in the ventricle for twenty-four hours prior to operation. The intracranial pressure was still so great that satisfactory retraction was still difficult; however, the right frontal lobe was elevated and the pituitary area exposed. A large tumor was found near the midline in the region of the sella turcica, which extended anteriorly as far as the cribriform plate and posteriorly beyond

the optic chiasm. The right optic nerve was completely obscured by the tumor. An incision was made into the mass and a large amount of chocolate-colored fluid obtained, following which the outer encapsulated area collapsed and the optic nerve assumed a more normal appearance. No attempt was made to remove anything but the contents of the tumor.

Postoperative Course.—The patient's postoperative course was stormy and she succumbed on December 10, 1938.

Autopsy.—Autopsy revealed an extensive neoplasm of the optic chiasm, the histological classification being an astrocytoma.

VASCULAR LESIONS

Vascular tumors constitute about two per cent of all intracranial tumors and are divided into the angiomas and the hemangioblastomas. The angiomas are usually situated in the cerebrum and are composed of a group of large and small blood vessels, some being arterial, others being venous or arteriovenous in type. These lesions are usually congenital; therefore, produce their symptoms early in life and are thus frequently seen in children. The symptoms naturally depend upon the area involved, but the most frequent symptoms are convulsive seizures. In a fairly large percentage of cases, angiomas of the brain are associated with birth marks or other vascular abnormalities about the face or scalp. When large angiomatous vessels occur around the optic chiasm, visual changes or degeneration of the optic fibers will occur from pressure. The treatment of angiomas is very unsatisfactory, but occasionally one may ligate or cauterize vessels with good results. On other occasions, X-ray treatment to the exposed field may be of some benefit. The following case illustrates an angiomatous lesion of the cerebrum which was compressing the right optic nerve, and thus causing a field defect and optic atrophy.

Case 1.—M. A. S., a girl, thirteen years of age.

Chief Complaint.—Convulsive seizures.

Present Illness.—The patient began to have convulsive seizures at the age of ten.

In the beginning they occurred about once a month, but have become more frequent lately, being of the grand and petit mal type. She has had some decrease in her intellectual ability, but even so is in the eighth grade at school. During the past year she has lost about thirty pounds in weight, but has grown three inches in height. The past medical history is negative.

Examination.—The girl is very tall for her age with large hands and feet. There is a butterfly pallor about the face and nose. The genitals are atrophic and there is no pubic hair. The visual acuity is impaired in the right eye, she being unable to read letters at two feet. There is a severe optic atrophy in the right eye and a slight temporal pallor on the left. She has a right facial weakness and a diminution of the reflexes in the upper extremities.

X-ray Examination.—Negative.

Encephalogram.—Suggestive of a right frontal lobe lesion.

Operation.—A right transfrontal craniotomy was performed. An extensive angioma in the right frontal lobe was found with compression of the right optic nerve by a large angiomatous vessel. The vessel was cauterized and ligated.

Postoperative Course.—The patient developed severe mental symptoms after operation and became very obscene, would not keep her clothes on, and voided in bed and on the floor. This condition gradually improved, but other behavior problems took their place, and the convulsive seizures increased in frequency. She was eventually sent to a sanitarium for institutional care.

ANEURYSMS OF THE INTERNAL CAROTID ARTERY

Another moderately frequent lesion about the optic chiasm and the sella turcica is an aneurysm of the internal carotid artery. Very often this condition occurs in the region of the cavernous sinus due not only to primary weakness within the vessel walls, but after fractures of the skull, although some aneurysms are asymptomatic. The majority of the patients with this disease develop neurological signs and

symptoms very early in their course. They show partial or complete ptosis of the lid with paresis or paralysis of the ocular movements, optic atrophy, reduction in visual acuity, and sensory changes in the face from involvement of the branches of the trigeminal nerve. Practically all of the patients will complain of pain over the eye on the affected side.

An X-ray examination will oftentimes show unilateral erosion of the sella turcica or enlargement of the optic foramen, and sometimes there may be calcification along the wall of the vessel, especially if the tumor has been present for a considerable length of time. The differential diagnosis is usually easy and can only be confused with meningiomas in the region of the inferior wing of the sphenoid bone or of the sella turcica and metastatic carcinoma. Neither of these conditions should cause much trouble in differential diagnosis. Certainly, however, the syndrome of involvement of the second, third, fourth, fifth, and sixth cranial nerves should make one suspect the existence of an aneurysm. The treatment should be ligation, not only of the common carotid, but the external carotid as well in order to inhibit collateral circulation. Two cases illustrating this syndrome are as follows:

Case 1.—M. M.

Chief Complaint.—Pain in the left side of the face, diplopia and protrusion of the left eye.

Present Illness.—The onset was six months ago, when the patient suffered a fracture of the skull in an automobile accident. She was unconscious and delirious for several days, but gradually recovered. When she regained consciousness she complained of diplopia, pain in the left jaw, and a roaring noise in her head. These symptoms became more severe until two weeks ago, when she noticed protrusion of the left eyeball and a very severe pain in the face.

Examination. — Examination revealed early choking of the left optic disk, loss of external and upward rotation of the eye, protrusion of the eyeball, and a bilateral increase of all the reflexes with a bilateral



A. W.—Ptosis of the lid and third nerve paralysis due to aneurysm of internal carotid artery.

ankle-clonus. There was a loud bruit over the left orbit which was transmitted over the entire skull. The general physical examination was otherwise negative.

Diagnosis.—A diagnosis of an aneurysm of the internal carotid artery was made and the vessel ligated.

Postoperative Course.—The patient had a great deal of trouble with the cornea and conjunctiva after operation due to congestion and a hemorrhage of the iris. However, in the course of several months, she improved, though there was occasionally a reappearance of the diplopia. In October, 1939, the eye was normal.

Case 2.—A. W.

Chief Complaint.—Headache.

Present Illness.—The onset was sudden five months ago with a severe pain over the right frontal region. This pain was described as throbbing in type and has been persistent to the present time. Occasionally he has had some pain in the left ear

and down the left side of his neck. Although the patient is not very definite, evidently there was a gradual ptosis of the left lid with double vision occurring prior to the ptosis.

Past Medical History.—Three years ago he had the same condition; that is, a sudden ptosis of the lid with diplopia when the lid could be opened.

Examination.—There is a considerable loss of vision in the left eye, the patient being hardly able to recognize light out of the left eye. There was some optic atrophy already present. He had a complete ophthalmoplegia with a ptosis of the left lid and an absence of the corneal reflexes. There was some loss of sensation to very light touch over the ophthalmic division of the left eye, but the remainder of the examination was negative.

Laboratory Data.—The blood Wassermann was four plus, but the spinal fluid examination was negative.

X-ray Examination.—X-ray failed to reveal any involvement of the clinoid processes, the sella turcica or the optic foramen.

Diagnosis.—Aneurysm of the internal carotid artery.

Operation.—March 15, 1940, Dr. Francis Murphey ligated the internal carotid artery.

Postoperative Course.—The patient had a transitory aphasia and weakness of the right upper extremity, but this is now greatly improved. His pain was relieved immediately, but the ophthalmoplegia persisted. There is some improvement in his vision, and he can now count fingers at a distance of six feet.

BRAIN ABSCESES AND SEROUS MENINGITIS

Abscesses of the brain arise by direct extension from a neighboring focus or by metastasis through the blood stream. They may extend to any part of the brain, but are usually in the neighborhood of their original source. The signs and symptoms of such abscesses may be divided into those of (1) infection, (2) those of increase in intracranial pressure, and (3) focal symptoms. During the acute stage of infection there usually are signs of low-grade meningitis, such as stiffness of the neck, increase in temperature, leucocytosis, and a

cellular reaction of the cerebrospinal fluid. Later these symptoms subside and after the abscess becomes encapsulated, the intracranial pressure rises, causing headache, choking of the optic disks, nausea, vomiting, and slowing of the pulse and respirations. Mental dullness, drowsiness, or even stupor will occur when the pressure is above physiological limits. Focal symptoms will develop, depending upon the location of the abscess, and these symptoms do not differ from other focal lesions of the brain.

In many cases solitary abscesses of the brain may be present for a long period of time before producing symptoms, and thus deceive us as regards to the original focus of infection. In such instances the symptoms merely indicate evidence of a tumor without giving any evidence of its true nature. The following case of an abscess in the sella turcica, which was treated as a pituitary tumor, illustrates these points.

Case 1.—O. J., woman, forty years of age.

Chief Complaint.—Loss of vision, headache, and loss of weight and strength.

Present Illness.—Eight years ago she had cessation of menses and some headache. These symptoms persisted, but one year ago following an infection of the face, they became very much worse. At that time she was in the hospital because of an infected furuncle, which caused swelling of the nose, both eyes and forehead, and was associated with an elevation of temperature. This condition quickly responded to treatment, but since she has noticed more severe headaches. About the same time her vision began to fail, she lost weight and strength, and her hair has become very dry.

Examination.—The patient was a pale, anemic, undernourished female, complaining of severe headache and loss of vision. She was admitted to the dispensary on July 24, 1939, at which time the examination showed bitemporal type of hemianopsia and an enlargement of the sella turcica. She was given X-ray treatment because of the diagnosis of adenoma of the pituitary gland. She was later transferred to the John Gaston Hospital because of generalized weakness and an exacerbation of her symp-

toms. The examination at this time, October 25, 1939, showed a bilateral optic atrophy and a bitemporal hemianopsia. The reflexes were all hyperactive, the right side possibly a little more than the left. There was a bilateral Babinski reflex, generalized weakness, and some slight ataxia.

Laboratory Data.—The basal metabolism was minus thirty-eight. The serology was normal, and the spinal fluid examination was negative except for seventeen cells, of which sixty-seven per cent were polymorphonuclears and thirty-three per cent were lymphocytes.

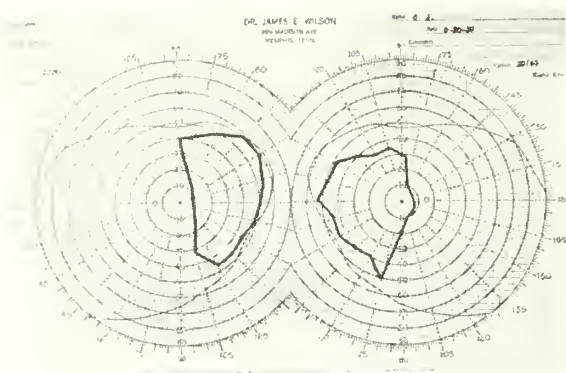
Further X-ray examination revealed a posterior clinoid that was thinner than on previous examination.

Diagnosis.—Lesion of the sella turcica, but probably not a pituitary adenoma.

Operation.—October 26, 1939, a right transfrontal craniotomy was performed. Because of the poor condition of the patient a second stage operation was planned and the first stage carried out on the above date. The next day the patient was stuporous and showed evidence of a hemorrhage under the bone flap. Immediate operation was carried out and a large clot removed. The clot had compressed the frontal lobe sufficiently to make access to the pituitary region a simple procedure. Upon elevating the frontal lobe and exposing the chiasm, a large bulging neoplasm in the pituitary region was encountered. It was situated in the typical position of an adenoma, but the color of the capsule was a yellowish white rather than the usual dark blue appearance seen in adenomas. An incision was made in the capsule and the contents of the tumor found to be filled with thick, creamy pus. The abscessed cavity was drained and swabbed with iodine.

Postoperative Course.—The patient's postoperative course was stormy. She developed another postoperative hemorrhage, following which the family informed us she had been a bleeder all of her life. She was transfused on three successive days, but died on November 1, 1939.

Autopsy.—Autopsy revealed an abscess adherent to the pituitary gland.



O. J.—Visual fields in case of abscess of pituitary gland.

LESIONS OF THE SELLA SECONDARY TO INTERNAL HYDROCEPHALUS

In a consideration of tumors of the brain, one must always be aware of the fact that focal symptoms may be produced by lesions somewhat distant. This is particularly true in cases associated with internal hydrocephalus. Sixth nerve paralysis, choking of the optic disks, mental changes, ataxia, and even pituitary syndromes may be produced by an increase in intracranial pressure alone. In this study we are particularly interested in the effect of the pressure upon the sella turcica and its contents, for an erroneous diagnosis may easily occur. The following case is presented to illustrate the occurrence of typical acromegalia with an erosion of the sella turcica from a tumor far removed from the source of the major symptoms.

Case 1.—F. P.¹

Chief Complaint.—Attacks of vertigo, buzzing sound in the right ear, persistent headache, enlargement of the hands and feet, and change in the facial appearance.

Present Illness.—The onset was about five years before when the patient developed dizzy spells. This persisted, but two months before admission she began to have severe headaches and momentary periods of obliviousness. In the last few years she has noticed that her hands and feet have become larger and that her facial expression has changed, the hair has become coarse, and she has gained about forty pounds in

weight. The past medical history is negative.

Examination.—A thirty-four-year-old woman who has the typical appearance of acromegalia. The hands and feet are large, the lips are very thick and the facial bones heavy. The skin of the entire body is thick and dry, but there is an increase in perspiration about the folds. The eye grounds showed two diopters of choking of the optic disks with two small hemorrhages, but there was apparently no cut in the visual fields.

X-ray Examination.—The X-ray examination showed heavy dense bone structure in the skull and sinuses. The sella turcica was greatly enlarged, the floor was eroded, and the posterior clinoids thinned and eroded. An X-ray diagnosis of intrasellar tumor with acromegalic changes in the skull was made.

Laboratory Data.—The basal metabolism was plus thirty-six. The patient was given X-ray treatment. She was readmitted in August, 1932, again complaining of headache. At this time it was noted that there was involvement of the eighth, ninth, and tenth nerves and a slight lateral nystagmus, but the pituitary symptoms were even more marked.

Operation.—A transfrontal craniotomy was performed with negative results.

Postoperative Course.—The patient was discharged and then readmitted, February 19, 1933, complaining of vertigo, weakness, and loss of vision. At this time the patient was found to have extreme choking of the optic disks and a great increase in intracranial pressure. Another transfrontal exploratory operation was done by Dr. Temple Fay, but the patient succumbed three days later.

Autopsy.—Autopsy revealed a tumor of the cerebellar pontine angle.

DISCUSSION

DR. COBB PILCHER (Nashville): Doctor Gotten has called attention to one of the most difficult problems that the neurosurgeon has to deal with. The location of the sella turcica almost in the center of the floor of the skull renders many lesions in that location either completely inaccessible or difficult or impossible of complete removal. Also

¹I wish to thank Dr. Temple Fay of Philadelphia, Pennsylvania, for permission to use this case.

the location of the optic chiasm and optic nerves, internal carotid arteries, and the dangerous proximity of the hypothalamic autonomic centers makes the region one of tremendous danger.

The cases which have been presented need no further discussion. There are, however, several conditions, which Doctor Gotten did not mention, of lesions in this general region which it may be well to mention. One of these is cavernous sinus thrombosis, which often gives almost the identical picture of some of the cases presented here.

There is the condition of suprasellar meningioma arising from the tuberculum sellae and producing

the same bitemporal hemianopsia which pituitary tumors produce.

Still another similar to the one mentioned is arteriovenous aneurysm between the carotid artery and the cavernous sinus. Like the plain arterial aneurysm which was mentioned, this should be treated by ligation of the internal carotid artery.

One technical suggestion that I might add to what Doctor Gotten has said is that frequently amputation of the prefrontal portion of the frontal lobe is of tremendous benefit in getting adequate exposure of this difficult region.

I enjoyed his paper very much.

CONTRACEPTION: A MEDICAL PROBLEM OF GROWING IMPORTANCE*

HARRY H. JENKINS, M.D., Knoxville

A recent survey issued by the Tennessee Department of Health¹ presents the national statistics on maternal and infant mortality, a few of which I should like to repeat: There are two million infants born in the United States each year with 14,000 maternal deaths, 75,000 stillborn infants, and an additional 70,000 which die in the first month. Of the maternal deaths, fifteen per cent are due to infection from abortion and 27.5 per cent are due to causes other than infection of nonaborted cases, toxemia of pregnancy, and hemorrhage. Forty-two and five-tenths per cent of our maternal deaths, by these figures, are due to abortion, or to *some cause which should have been a contraindication for pregnancy*. In all probability, considerably more than 42.5 per cent of our infant mortality would fall into this classification. These are the figures for mortality. How much morbidity among something less than two million pregnancies, due to these causes, would stagger the imagination.

In recent years the value of prenatal care has been stressed by all agencies interested in the improvement of our maternal and infant mortality rates. This increased prenatal care, together with better delivery technique, and more adequate postpartum observation will go far to reduce the mortality in the 57.5 per cent of our cases that die as a result of some direct complication of pregnancy. But what of the 42.5 per cent who die as a result of infected abortion, or some complication which should have been a contraindication for pregnancy? It is to the care of these patients that I should like to call your attention; that is, to a further reduction of maternal and infant mortality and morbidity by pre-prenatal care, the control of conception.

The control of conception, or to use its synonymous terms, birth control, contraception, or preconceptional care,² has, in the articles previously written, been a highly controversial subject. The legality, ef-

ficiency, and particularly the morality have been questioned.

We shall not here defend the moral aspect of this problem, for, although we can quote as many or more prominent religious bodies that endorsed birth control than have opposed it, we prefer to leave the moral issue to the conscience of each individual physician and his patient and confine our discussion, from a medical aspect, to its legality, efficiency, and the technical procedures connected herewith.

*The Legal Status.*³—The so-called Comstock law, passed by congress in 1873 and expanded by amendments since that time, prohibits the exporting, importing, carrying by mail, express, common carrier, or in interstate commerce, of any publication of indecent character, or of any publication, article, instrument, or medicine, designed, adapted, or intended for preventing conception or producing abortion. Following these federal statutes, the state legislatures passed similar laws, with the exception that in a goodly number of states, and Tennessee⁴ is in this group, no mention is made of contraceptives. However, in the past decade particularly, the federal courts, up to and including the Circuit Court of Appeals, have rendered decisions to the effect that the design of these laws, and I quote verbatim from a decision, is: "Not to prevent the importation, sale or carriage by mail of things which might intelligently be employed by conscientious and competent physicians for the purpose of saving life or *promoting the well-being of their patients.*"⁵ In only two states, Massachusetts and Connecticut, has a decision of adverse import been rendered. In the light of these decisions, there can hardly be considered to be, in this state, any legal contraindication for a duly authorized physician to practice birth control as he deems necessary for the health and well-being of his patients. We do feel that the present national laws, however, constitute a menace to every practicing physician, since in a strictly literal interpretation of the law, they challenge his

*Read before the Tennessee State Medical Association, Chattanooga, April 9, 10, 11, 1940.

right to do therapeutic abortions, regardless of the indications, and make it illegal for him to possess, disseminate, advise the use of, or discuss in writing, any oxytoxic drug, or any instrument used for the dilatation, curettement or packing of the cervix or uterus, since any of these may be used for abortion, to say nothing of requiring the strictest censorship on all matters pertaining to contraception, with no regard for the medical indications therefor. In our opinion, it behooves the committee on legislation of the state and national medical associations to see that this outmoded, and from a medical standpoint, grotesque law (in which the physicians of this country are classified with the furtive, slinking, street corner venders of lewd and obscene literature) to see that these national laws are obliterated, substituting therefor, adequate laws on obscenity, and offering protection to the unadvised public from the ravages of quacks, abortionists, and unethical advertising concerns, on all matters relating to the production of offspring. Such a course has already been endorsed by the American Medical Association, Section on Obstetrics, Gynecology, and Abdominal Surgery; the Section on Nervous and Mental Diseases;⁴ and the American Gynecological Society.

The Ethical Status.—Previous to 1935, probably due to the influence of pressure groups, religious and otherwise, no discussion on contraception had been brought to the floor of the House of Delegates of the American Medical Association. At this time, however, a "Committee to Study Contraceptives and Related Problems" was appointed, and its report, submitted in 1937, was unanimously adopted by the House of Delegates. This report consisted of the following recommendations:

1. "That the American Medical Association take such action as may be necessary to make clear to physicians their legal rights in relation to the use of contraceptives.

2. "That the American Medical Association undertake the investigation of materials, devices, and methods recommended or employed for the prevention of conception,

with a view to determining physiologic, chemical, and biologic properties and effects, and that the results of such investigations be published for the information of the medical profession.

3. "That the Council on Medical Education and Hospitals of the American Medical Association be requested to promote through instruction in our medical schools with respect to the various factors pertaining to fertility and sterility, due attention being paid to their positive as well as their negative aspects.

4. "All dispensaries, clinics, and similar establishments where information and advice concerning the prevention of conception are given to the public should be under legal incensure and supervision and under medical control."

By such action the American Medical Association has placed its endorsement on the need for contraceptive procedures, on the recognition of contraception as a medical problem, and on its incorporation as a subject to be placed under strict medical supervision. Furthermore, contraception as a medical procedure has been endorsed, advised, and even urged, separately and individually, by such leaders in the field of obstetrics as Adair and Whiteacre of Chicago,⁷ Williams of Baltimore,⁸ Stander of Cornell,⁹ King of New Orleans,¹⁰ Taussig of St. Louis,¹¹ Dickenson of New York, and hundreds of other medical authors of authoritative standing.

We can draw only one conclusion: American medicine is awakening to the fact that the prevention of pregnancy is a vital necessity to a large number of American women, and that it is the responsibility of organized medicine and of the individual physician to see that the greatest number possible of these women, regardless of social position or economic status, are instructed in the most adequate methods of securing such prevention.

There is still another angle most worthy of consideration. The interest among the laity in this problem is tremendous, and is being daily stimulated by open discussion in the popular magazines and newspapers of the day. That public demand for con-

traceptive advice is commensurate with this publicity is shown by the Gallup Poll of January 24, 1940, wherein seventy-seven per cent of the answers approved of having government health clinics furnish birth control information to married people who want it. What an opening wedge for state medicine lies in the establishment of such clinics! Yet either American medicine will supply this demand for contraceptive advice, or such a wedge will surely be driven.

The Technical Status.—There are three types of indications for the use of contraceptives; namely, personal indications, economic indications, and medical indications. The first two of these are outside the medical field in the strictest sense, hence we shall discuss only the third or medical indications. As shown by the chart below, these are classified as to their use for (1) the protection of the life of the mother, (2) the protection of the health of the mother, and (3) protection against the production of abnormal offspring.

MEDICAL INDICATIONS FOR CONTRACEPTION

For protection of life of mother:

- Cardiac disease, classes II, III, IV
- Renal disease
- Hypertension
- Diabetes
- Hyperthyroidism
- Tuberculosis
- Toxemias of organic origin
- Recent or debilitating major surgery
- Recent or debilitating trauma
- Severe anaemia
- Repeated Caesarean section
- Chronic disease of debilitating nature

For protection of health of mother:

- Cardiac disease, classes I, II
- Psychosis and neurosis
- Extensive pelvic repair
- Uterine inflammations
- Uterine prolapse
- Uterine anomalies
- Vaginal anomalies
- Major complications of previous pregnancy
- Pregnancy within eighteen months
- Contracted pelvis
- Pelvic deformities

Malnutrition

Renal infections

Repeated abortion

For protection against the production of abnormal offspring:

Debilitating diseases of mother or father

Repeated defect in previous offspring

Familial psychosis or neurosis

Familial epilepsy

Familial syphilis

Familial alcoholism or narcotism

Economic status of family

Pregnancy within eighteen months

The ideal contraceptive device or procedure has not yet been introduced; this fact, even the most ardent birth control advocate will admit. The procedures which are available, however, have been productive of such gratifying results, and the prospects of improving on present-day methods under the active supervision of the proper medical authorities so bright, that there can be no rational objection to contraception on the grounds of lack of success. An adequate contraceptive must have the following characteristics: (1) harmless to patient, (2) high degree of contraceptive efficiency, (3) easy for patient to use, (4) economical, (5) high "acceptance" rate with patients, by which is meant that the patient will continue to use the procedure over a long period of time. The types of contraceptives listed below will be evaluated on the basis of these requisites:

TYPES OF CONTRACEPTIVES

1. Functional:

Celibacy

Coitus interruptus

"Safe" period of rhythm theory

Celibacy is out of the question since it is neither easy for the patient to use nor will it have any "acceptance rate" with any congenially married couple. Coitus interruptus, one of the contraceptive procedures most widely used, may be dangerous in its psychic effect on the married partners, has a low degree of contraceptive efficiency, is not easy to use, and is perhaps the contraceptive procedure most quickly and with most alacrity abandoned when something

better is offered. The rhythm theory is the subject of much controversy at the present. It is harmless to use, most economical since it does not involve any expense whatsoever, and is the least unesthetic of all procedures. Most important of all, it does not conflict with any religious or other anticontraceptive principles. For this reason, it has been enthusiastically accepted by those who would adhere to these principles, and their reports have been enough to encourage such enthusiasm. Unfortunately, to those investigators¹² who have approached the problem with less bias, the difficulty of accurately estimating such a cycle of fertile and sterile periods, plus the lack of any very definite proof that such a condition actually exists in all or a majority of women, presents a barrier of such magnitude that considerable skepticism toward this method must be exercised until further research produces more accurate technical procedures for its use.

2. Permanent or quasi-permanent:

Male:

Vasectomy, castration, irradiation

Female:

Tubal ligation or resection

Intrauterine tubal occlusion

Oophrectomy or hysterectomy

Irradiation with X-ray or radium

The above procedures are so well known that further comment here is unnecessary. In connection with sterilization of the male, it is interesting as an observation on male psychology to note the remarks of Watson of Sloane Hospital as extracted in a recent yearbook of obstetrics and gynecology: "As surgical sterilization of the male is an easier and much less hazardous operation than that of the female, it might be thought that many devoted husbands would have this done in order to save their wives. In Watson's whole experience, only one, and he a medical man, has made this choice."

3. Immunity to conception:

Lactation

Hormones

Spermatoxins

Irradiation or heat application

The fallacy that lactation is a protection against pregnancy has been exploded; the

use of hormones, in our present state of knowledge, is certainly extremely dangerous, with results as yet quite dubious; spermatoxins have been experimented with in Russia and other European countries, but practically none in this country, and at the present time must be regarded as but a possibility for the future; and finally, the dosage of less than castration amounts of irradiation or heat are, as yet, too little worked out to offer more than an experimental subject. All in all, this group of contraceptive measures are too new for present-day use, but offer a most interesting field for future research.

4. Mechanical contraceptives:

Condemned:

Stem pessaries of all varieties

Intrauterine rings

Douches, with or without medication

Advised with reservation:

Rubber sheath or condom with jelly

Chemical agents used alone

Jellies, suppositories, tablets, foam powders

Recommended:

Foam powder with sponge

Vaginal diaphragm with jelly

Cervical caps

The chart¹³ below summarized the reasons for this classification. These figures are obtained from a survey recently made of all the available reports on the use of these devices, and represent an average rather than the results of one series of cases.

It is well known that stem pessaries and intrauterine rings, aside from having a low efficiency, are condemned by almost all gynecologists as a source of potential danger from chronic irritation;²⁰ douches, even when properly taken as they most often are not, have so low an efficiency that they must be ranked only very slightly above no contraceptive whatsoever; the objection to the use of the condom is based on the lack of control over manufacture of the devices with the resulting deficiencies of the merchandise so marked that recent government investigation has resulted in confiscation as unsatisfactory products of as high, in some cases, as ninety-five per cent of the

COMPARATIVE STUDY OF VARIOUS CONTRACEPTIVE METHODS

	Total No. of Cases	Per'd of Ob- serv.	Total No. of Users	Accept- ance Rate	Used Success- fully	Fail- ures	Effi- ciency
1. Pregnancy rate without contraceptives ¹⁴	277	1 Mo. 3 Mos.	277			50% 75%	50% 25%
2. Stem Pessaries ¹⁵	368		368		174	194	47%
3. Douches ¹⁵	4529		4529		1364	3165	30%
4. Condom ¹⁵	5713		5713		3059	2654	53%
5. Jelly Alone ¹⁵	2031		2031		1054	977	52%
6. Sponge and Foam Powder ¹⁶	927	2 yrs.	647	67%	505	142	75%
7. Clinic Cases: ¹⁷ Diaphragm with jelly	12990	2-6	9783	75%	8498	1285	87%
8. Private Cases: ¹⁷ Diaphragm with jelly	662	12	559	84%	473	86	84%
9. Knoxville Clinic: Diaphragm with jelly	575	3	—	—		38	93%
10. Cervical Caps ¹⁵	66	2	52	74%	49	3	95%

total stock. This, plus the aversion of its use, whether it be deserved or not, on the grounds of interference with sexual satisfaction (the reason, usually given, you probably all know, "it is like washing your feet with your sox on") detract markedly from an efficiency and an acceptance rate, which under corrected circumstances would, in all probability, warrant inclusion in the list of recommended devices. Jellies, tablets, suppositories, and foam powders have been the subject of such contradictory reports that one must be suspicious of their efficiency until more adequate data is published.

The foam powder and sponge method is gaining rapidly in favor with clinics and public health units because of the ease of distribution, but its efficiency, as shown in the chart above, rather contradicts the reports from North Carolina and other clinics in which its efficiency is claimed to approximate or equal that of the diaphragm and jelly, and one unpublished series from Florida found it to be only thirty per cent effective. I have been unable to find a single discouraging report on the efficiency of the vaginal diaphragm with contraceptive jelly, and the fact that it has been almost universally adapted as the method of choice by physicians, medical schools, and medical clinics points it out as the outstanding

method of contraception of the present time. But it, too, has its disadvantages. The patients with rectocele, cystocele, retroversion uteri, lacerated perineum, chronic constipation, and similar conditions are fitted with difficulty, even with the modified diaphragms that are modeled to take care of such conditions. For these people cervical caps, made of hard rubber, metal, or plastic materials are being recommended, not to be worn permanently as are stem pessaries, but to be introduced as needed, or, at the most, for two- or three-week intervals. A prerequisite of such fittings, however, is to have the pelvic organs, particularly the cervix, absolutely free of inflammatory conditions.

It is my opinion that any of the devices mentioned in the recommended with reservation or recommended groups, if used according to rigidly prescribed rules, will give a highly satisfactory efficiency, but that the big problem in giving contraceptive advice, especially among the lower income bracket of patients, is getting a satisfactory acceptance rate. Frequent check-ups, change of methods, the use of educational lectures, and moving pictures may be a great aid in increasing this rate, but as yet, the complete answer to this problem has not been found. The trend of opinion at the present

time is toward an individualization of cases, using the device that has the highest appeal to the individual patient, and hence will have the highest acceptance rate. The physician, to render best service, should be well acquainted with the several types of devices recommended, and spend sufficient time and thought with each patient to prescribe for her the type she will use longest, oftenest, and best.

In conclusion, allow me to briefly outline the final controversial aspect of this subject: the lay organizations that have grown up in support of the "Birth Control Movement." Kosmak,¹⁰ in his paper recently published in the *Journal of the American Medical Association* took occasion to criticize rather harshly, and perhaps with some reason, the "hysteria, agitation, loose thinking, and inadequate reasoning" of certain members of the laity connected with this movement, yet I feel certain the same criticism has been leveled at a certain number of advocates of any revolutionary movement in history, scientific, social, and economic. No plan, great or small, should be condemned because of the overenthusiasm of a fringe of its proponents. We do not amputate a leg because of ingrown toenail, nor do we destroy a city because of its slum districts.

The national organization in support of this movement is the Birth Control Federation of America, an organization open to anyone who wishes to become a member, and whose policies are dictated by a board made up to some extent of medical personnel. Its purposes are to sponsor medical research into the efficiency of the contraceptive procedures (until some action on the part of the American Medical Association, there is no other source of such information); the establishment of contraceptive clinics (as in Nashville, Memphis, Chattanooga, Knoxville, and elsewhere); and the dissemination of educational material for acquainting the public, medical, and lay alike, with the urgent need for an adequate and comprehensive birth control program. State, county, and city organizations function under its supervision to carry out this program.

All these organizations are made up of those members, both medical and laity, who are interested enough in the problem to contribute time, money, and initiative to its promotion. I have had considerable contacts with the leading members and the policy making officials of the national and state organizations, and have found them all intensely interested in having this problem under the guidance of organized medicine willing at all times that their organizations be subservient to any adequate program proposed and carried out by the physicians of America. I can assure you that all organizations will cooperate to the fullest extent possible with any individual physician, with any city, county, state, or national group of physicians in any project for the advancement of contraception, up to and including financial assistance, as well as organization, research, and education.

My attitude in this matter is that we have splendidly organized national and state organizations begging to be allowed to help the medical profession put over a new and important adjunct to maternal welfare, willing to accept the direction of organized medicine and asking nothing in return. We are accepting the same thing for tuberculosis, for crippled children, and infantile paralysis and many other medico-social problems. Shall we make an exception of birth control?

SUMMARY

1. Forty-two and five-tenths per cent of maternal mortality and an even larger percentage of neonatal mortality is due to abortion or some cause which should be a contraindication for pregnancy.

2. As a vital factor in the prevention of death and debility among our women and children, contraception must be ranked just below, if not equal to adequate prenatal care.

3. Its incorporation in the practice of medicine has been approved by an overwhelming majority of medical organizations and individual authorities.

4. An adequate program of maternal welfare, including contraception, will prove an effective barrier against state medicine.

5. Our present recommended contraceptive devices carry a high degree of efficiency, but some method to increase the acceptance value of contraceptives over a long period of time is badly needed.

6. The lay organizations are anxious for medical control and are willing to coordinate their programs with any adequate plan organized medicine may adopt.

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DISCUSSION

DR. H. P. HEWITT (Chattanooga): Mr. President, Ladies, and Gentlemen: I think you need a minister to open the discussion on this paper because the doctor covered the medical, but left off

the moral aspect. I can only reemphasize one or two of the points that were mentioned. I should like to direct my remarks to the technic of contraception. I agree with all of the speaker's indications and contraindications, and so on. I think the safe period is all right, but I have known pregnancy to occur every day in the month, including the days of menstrual flow, so do not get the idea that a woman can get pregnant only one day out of the month. Nobody knows when the ovum is going to be extruded.

The *Macacus rhesus* is the closest of the monkeys to the human race, and it has been proven that the monkey ovulates anywhere from the eighth to the twentieth day after the period has begun. Not many women can recognize the ovulation when it does occur. If a patient were so fortunate as to have the hour or so of vaginal staining which accompanies ovulation, she would be able to control conception.

Lactation is a fallacy. The thing that causes sterility following delivery and lactation is that all these patients you examine at the end of six weeks postpartum have a cervical plug, and as long as that cervical plug stays in the patient is not going to become pregnant.

The fallacy about douches is that often in sexual relation there is direct insemination, the sperm goes directly in through the cervical canal, and if the spermatozoa get into the external os they are gone and no douche will reach them.

Patients want to know what is a good emergency douche. Carbonated water is the best. Carbonated water will paralyze every one of those sperms as soon as they come in contact with it.

Foam powder has not the reputation that the vaginal diaphragm and jelly has, for the simple reason that we use the foam powder and sponge on patients whom we cannot fit with a diaphragm. At Memphis, they are using it routinely on patients who could be fitted with a diaphragm, but my experience in private practice has been 100 per cent failure because I have used it on patients I could not fit with a diaphragm. We have at the hospital some patients who will not use the diaphragm, and we have had about sixty per cent success. I notice Doctor Jenkins' figures gave the diaphragm and the jelly ninety-three per cent. Ours on the charity service is ninety-five. In private practice I have had no failures except through nonuse.

(Slide) This is a diaphragm to show the distribution of causes of death in pregnancy. You see that abortion takes twenty-two per cent, sepsis twenty-three, toxemias twenty-three, and all the other things there account for the rest.

(Slide) This is the technic of the diaphragm and jelly. So many doctors think that the diaphragm is a cervical cap. It is not. The thing to do is to fit the largest diaphragm possible. I had a patient in the office yesterday who had a sixty-five diaphragm and she had gotten pregnant

on it, and I fitted her again and she took a ninety, and ninety looks like a skull cap for a schoolboy. This shows the jelly. I prefer to use the jelly on the inside and on the outside and all around the rim.

(Slide) This shows the technic of insertion. The diaphragm is collapsed with the hollow part toward the patient so you get a more even vacuum. You can use the dome inside, but it does not make much difference. You get a better vacuum if you use the hollow part toward the patient.

(Slide) This shows the diaphragm that has been inserted. The diaphragm has to fill the space from the bladder down to the cervix and the cervix back to the rectum, filling the whole lower vaginal vault. The patients say the birth canal is not that large. It isn't, but this is filling the posterior vaginal vault. The diaphragm covers the whole space and the failures are due to the fact that the doctor does not fit them large enough.

(Slide) That shows the proper place, covering the cervix and filling the whole space. It has to be up under the symphysis and back behind the cervix.

(Slide) This shows the patient removing it. She catches the rim under the symphysis and removes it. The diaphragm is giving ninety-eight per cent perfect results, and I think two per cent failure is due only to human error.

DR. BARTON McSWAIN (Paris): Although Doctor Jenkins touched upon the technic of contraception, I do not think that that is the main point he is trying to bring out. He is trying to present it to us as a medical problem, and there are two points that he made which I think will bear a little emphasis. There is still on the federal statute books a law which prohibits contraception and prohibits any advice given by the physician to the patient concerning contraception. The second point is that the only way a patient can find out anything about the technic of contraception is (1) by the drugstore literature, or (2) from her physi-

cian. I should like to hear a little bit more discussion from Doctor Jenkins as to how he wants to remedy this situation. I think it is our duty to try first to rid the statute books of that law; second, to educate the physicians to educate their patients; and third, to suppress the drugstore literature.

DR. HARRY H. JENKINS (closing): I would like further to emphasize Doctor Hewitt's point that the sponge and foam powder is not a substitute method for the vaginal diaphragm to be used when the vaginal diaphragm cannot be fitted. In a certain number of cases, those with a relaxed or lacerated perineum, with a partial prolapse of the uterus, or with some similar condition, it is almost impossible to fit these patients with a vaginal diaphragm. In the same patients the efficiency of the sponge and foam powder is also low. For that reason we have special types of contraceptive devices; a vaginal diaphragm built on a Smith pessary, for instance, may often be used in the case of cystoceles and rectoceles, and then the cervical caps, those which are fitted directly over the cervix, give as high as ninety-five per cent efficiency in those cases that have relaxed conditions.

As to how to remedy this situation that we now have wherein the patient must seek her contraceptive advice from quacks or from drugstore advertising, the only remedy for that situation is to incorporate contraception as a fundamental part of our maternal welfare program. Two years ago we had a very efficient maternal welfare program in the state of Tennessee under Doctor Whitaker, in which the prenatal care was stressed, adequate delivery service was stressed, and adequate postpartum care. It is my contention that this postpartum care should include, at least equally with any of the other things, adequate contraceptive advice to those patients in whom there is some medical indication.

I wish to thank Doctor Hewitt and Doctor McSwain for their kind remarks and all of you for your attention.

CONTACT INFECTIONS IN CHILDREN*

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The American Academy of Pediatrics is sponsoring a nation-wide campaign against contact infections. Their interest in this respect focalized about one year ago. Educational facts and pamphlets on pertinent phases have periodically been released to the medical profession for professional guidance and for distribution to the laity. Interest is gradually being more generally awakened to the importance of this endeavor. Dr. Fairfax Hall, 421 Huguenot Street, New Rochelle, New York, is general chairman of this national committee, and for further details desired than herein included communication with him is recommended.

Contact infection in its broadest sense includes those diseases acquired by personal contact with an active case or carrier of some disease. It is beyond the remotest presumption of the writer that all present are not aware of the immunizations to the common contagious diseases. For that reason references to same are purposely omitted.

Diseases acquired in the home from parents, or relatives, or servants, and from teachers or others apparently well are especially being emphasized in this message. By such I refer particularly to tuberculosis, typhoid, gonorrhea, and syphilis. Until recently this has been a group seemingly quite neglected. It is true that their occurrence in pediatric private practice may be rather infrequent, but I will venture to wager that there is not a man here who has not been asked what to do with others in a family when a known tubercular is recognized, when a case of typhoid is found in the neighborhood, when gonorrhea is diagnosed in an adult around whom children have been, or when a servant is found to have syphilis. It is something for which we should all have a common answer. One patient asks her doctor and a definite statement is made, whereas her friend asks her

private physician and a conflicting definite statement comes forth. Result is the patients think that one doctor is wrong, and both fear it may be their physician, resulting, frequently, in nothing being done.

Tuberculosis is the most serious of the above mentioned. Whereas the mortality from this disease has relegated it from the captain of death to about third or fourth place, this demotion detracts nonetheless from its importance and need for further efforts in curbing its plunder. For example, in 1900, 201.9 deaths per 100,000 population was accredited to tuberculosis. Now it causes but 53.6. If such progress was possible in the light of lesser knowledge than now exists, one can anticipate a still lower mortality.

It is not my intention to bore many here by the citation of example after example of known contacts causing tuberculosis in children. Proof is usually obvious when the diagnosis has been made in an elder. The prolonged period in which the host harbors the disease, totally unaware of its presence, makes tuberculosis a social problem of great importance. A study recently made through the Department of Health, Bureau of Tuberculosis, New York City, revealed some interesting facts worthy of note. Quite interesting was the conclusion that no clinical study of pulmonary tuberculosis is of value without the use of X-ray. It was proven that positive sputum was the greatest single factor in its spread. That the incidence of tuberculosis infection in children depended largely on positive sputum contact. That a tendency to the disease was not probable. That pulmonary tuberculosis in infants and young children was not very common. In this study contacts exposed to positive sputum cases showed an increased degree of sensitivity as was indicated by the intensity of the reaction to tuberculin. The control of positive sputum cases was the most effective means of limiting the spread of the disease. It may be of interest to note progress made in our state since the appropriation of

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\$100,000 by the 1939 legislature to fight tuberculosis among school children. In thirty-eight counties 20,909 pupils have been tested as reported in March by Health Commissioner W. C. Williams. Of this total, 12,550 in twenty-five counties have been X-rayed and positive reaction found in 1,757, or fourteen per cent. Of 10,120 completely examined, 1,412 positive tubercular reactors were discovered. Of these 1,412, 1,351 were X-rayed and fifty definite cases and thirty-nine suspicious were discovered. This study will lead to home investigations, and further work, to locate the original source of infection for each case and cessation of further dissemination of the bug. From these facts it is very apparent that tuberculosis is a contact infection of highest importance.

Through the recently renewed interest in the public health aspects of domestic service in attempts to minimize health hazards incident to domestic employment by periodic examinations, the director of public health service in San Francisco revealed four domestics as typhoid carriers in 1939. In each instance the carrier was identified after the development in the family, or in one instance, in the cafeteria in which the domestic was employed. None of these four carriers ever gave a history of having had the disease. A report from the division of communicable diseases, New York State Department of Health, Albany, New York, in 1938, revealed 570 chronic typhoid carriers discovered in the state from 1911 through 1935. Exclusive of fifty-nine carriers from state institutions, approximately seventy-two per cent of all carriers were discovered by epidemiological investigations of typhoid fever. The incidence of typhoid fever among the household contacts was found to be forty-two times that of the general population. These two reports reveal the great probability of contracting this disease through contact with servants particularly. What to do about this will be discussed finally.

Gonorrhea commonly occurs in children as ophthalmia, vulvovaginitis, or urethritis in the male. The source is usually an innocent contact with parents or nurses, usually

from garments, towels, or utensils. Innumerable possibilities for such to happen can readily come to your minds, I am sure. In my experience I have found only such as vulvovaginitis in attempted intercourse and as ophthalmia from swimming pools. Servants are commonly afflicted in the South, and the possibility of contact causing such in young infants is not unlikely.

Acquired syphilis in children is rare, mostly because the infectious stage is shorter and because contact must be more intimate. One writer, however (Frank R. Smith, Jr., *American Journal of Syphilis*, March, 1939), reports a series of 125 children ten years of age or under from among the larger pediatric clinics of eastern and southern United States. From this group forty-three were from attempted sexual intercourse, fifteen kissing, fourteen household contact, nine transfusion, and forty-four unknown. Conclusions noted were that casual contact, even with a person in the active stage of syphilis, rarely results in infection in the child. The risk of acquiring syphilis by the ordinary contacts between individuals living in the same house, such as is encountered with food handlers, nursemaids, and servants, seems to be small; but when the contact is intimate, as in the case of young children with their mother, the risk is sufficient to have a practical significance. Since so much publicity has recently been given syphilis for educational purposes, many patients have called, stating their maid has just been released because of having syphilis. They usually want personal Wassermanns immediately, and another maid Wassermann negative. They find it hard to believe that it is more desirable to have a maid with syphilis taking treatments regularly than one without who may contract such overnight.

These examples of four commonly-found infectious diseases acquired by contact in and about the home and school have been brought before you to accentuate the need for interest in prophylaxis for same by pediatricians and general practitioners. To this end the following is recommended: yearly medical examinations of the adults intimately associated with children. These

adults are nursemaids, domestic servants, schoolteachers, parents, relatives in the household, trained nurses, and pediatricians. Effort should be directed particularly toward nursemaids and domestic servants who assist with the care of children by providing for them examinations which will include Wassermann test and lung X-ray, with health cards as assurance of good health record, or having had such examinations.

A great deal could be accomplished by organized effort, but the medical profession must first realize that such a need exists. While it is impossible for each active professional man to become enthusiastically active in every issue presented, an understanding of the subject is necessary before support can be expected. But no widespread effort to understand, nor systematic procedure of accomplishment, is generally practiced in this respect, except through public health. In my opinion, this is a fallacious shifting of responsibility. The more we unload our responsibilities on state medicine, the stronger it gets (the more we feed the critter, the fatter it gets). May I suggest we go to market while there is yet time. A workable plan might be a committee of one or more pediatricians or general practitioners to be appointed in every county and city in the state with one state chairman. Each may act as a motivating agent to influence endorsements of the principle of "Healthy Adults in Contact with Children," and to get cooperation in the program for periodic medical examinations of adults. It would be necessary to read papers and discuss this subject at medical meetings. Literature on contact infections could be distributed to all physicians in the community (these would be furnished by national committee). To facilitate care of indigents, it would be advisable to get cooperation of laboratories and roentgenologists so that the charge for Wassermann and lung X-ray would be at a low rate.

If and when the medical profession rec-

ognizes this need, it would be timely for the laity to be advised. Each local paper might be persuaded to publish prepared articles stating the object of the campaign and some reasons for its furtherance. A few timely citations of actual contact infections locally—or possibilities—would start those usually on the anxious seat to start talking. With propaganda before all Parent-Teacher Association groups, women's clubs, men's service clubs, Junior League, etc., with essential follow-ups to enlist those interested, a field army could soon be organized. Then, too, a dovetailing of tuberculosis and public health association interests could lend a more concerted effort. Teachers could be encouraged to have periodic examination by contacting all boards of education as a stimulating influence; servants likewise by contacting employment agencies with an effort to stimulate interest in "health cards"—a means affording greater security for employment for the domestic, and greater safety and protection for employee. Each doctor's office could have available for distribution to the mothers pamphlets on the subject—"For the Sake of the Children."

I have tried to present the need for further interest and activity on contact infection in the home and school. I have tried to explain what to do. I have tried to explain how to do it. There remains only to say who is to start, and when. I suggest the state chairman of the Academy of Pediatrics, or president-elect, as the Tennessee chairman to work with the national committee to help Tennessee be the first in the South to start this state-wide movement. An opportune suggestion might be that a presentation of our outline of action be given to the Southern Conference for Human Welfare now in concentrated action on Southern problems. This forum holds its second annual convention in Chattanooga, beginning April 14. Were a committee selected now under the suggested chairman to contact this organization, our initial effort might gain the desired impetus.

AN ANALYSIS OF METRAZOL THERAPY, TOGETHER WITH A THEORY OF INTERPRETATION

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Since the original article by Meduna¹ in 1935 a voluminous literature has developed with respect to the use of metrazol in shock therapy. Although it is desirable, if not incumbent upon the clinician, to be familiar with most of this material, it is not the purpose of this analysis either to refute or sustain this earlier work. Rather, it is the desire of the present writers to describe and discuss a technique, and to propose an interpretive theory which appears to be not only plausible in the abstract, but also compatible with the data which are presented.

The patients who have been used in the study were selected at random, or as near at random as was possible in light of the fact that not every patient in the institution is available for shock therapy. The only requirement for inclusion in the experimental group was that a patient had to be in satisfactory physical condition at the time of selection. Duration of the psychosis was not considered.

With respect to the techniques employed, the patient was not allowed breakfast on the day of the injection. The patient was placed flat on the bed with an attendant at each shoulder, and an attendant at each hip, after which an initial dose of four and one-half cubic centimeters of metrazol was injected. The gag was hidden from the patient, and every effort was made to avoid apprehensiveness or fear on the part of the patient. It had been found previously that it was necessary to inject the metrazol rapidly into one of the larger vessels of the arm, and that there must be no leakage, either around the barrel of the syringe or where the needle and syringe connect. It has been found in some instances that the slightest loss will be responsible for the difference between a good convulsion and an abortive one. Many have the characteristic aura that has been described in the

literature as well as a slight cough that precedes nearly every convulsion. Shortly after coughing the patient would go into a convulsion, and throw open his mouth, at which time the gag was introduced on one side or the other in line with the teeth. Attendants place their hands on both of the patient's shoulders and hips, but without any marked application of pressure. The extremities were allowed to be free. As the convulsion seizure caused the shoulders and hips to rise from the bed, the attendants maintained what was called "passive resistance pressure." This means that only enough pressure was exerted to maintain the general level of the body, and no attempt was made to add any undue or unnecessary stress to the already great muscular contractions. The gag was left in the mouth until such time as the patient released it voluntarily. After this, if a patient wished to sleep, or wished to return to his ward, the indicated wish was granted. The use of this technique resulted in no broken bones or serious accidents, and no other undesirable consequences except for an occasional dislocation of the jaw. This, of course, could be cared for easily.

An analysis of Chart I reveals that of the twenty-two cases studied seventeen were females and five were males. The age range was from eighteen to forty-two years. The mental diagnosis classified sixteen patients as cases of dementia praecox, or parergasia, or schizophrenia; three as manic-depressive cases, thymergasia; two as manic-depressive with schizophrenic features; and one dementia praecox with manic features. In the third column the reader will note the "basic drive affected." This latter involves a matter of considerable import in a consideration of explanatory hypotheses with respect to the basic etiology behind metrazol therapy. This will be discussed in more detail later.

Number of Patients	Age on Admission	Diagnosis	Basic Drive Affected	Admission	Length of Time of Psychosis Prior to Admission	No. of Admissions	No. of Injections	Abortive or None	Fear of Injection	Condition if Abortive	Accidents	Condition of Patient	Weight	Home	Hospital Length of Time	Returned	Cause of Return	Condition at Home	Education	Religion	Remarks
1	22	D. P. Cat.	None	12-18-39	4 months	1	17	5	None	Excited	None	Good	6 lbs. gain 5.7%	2-24-40	2 months 6 days	No	—	Good adjustment	High school bus. course	Church of Christ	Good report in follow-up letter
2	28	D. P. Paranoid	Desire to live	10-21-39	4 months	1	15	1	None	Depressed	None	Good	31 lbs. gain 24%	2-2-40	3 months 12 days	No	—	Apparently adjusted	Tenth grade	Church of Christ	None
3	42	D. P. Paranoid	Desire to live	3-21-38	5 years	1	15	0	Yes	None	None	Improved	6 lbs. loss 6%	No economic reasons	2 years 1 month	—	—	—	2 years college	Methodist	None
4	25	D. P. Cat.	Desire to live	12-18-39	3½ months	1	18	3	Yes	Excited	None	Improved	28 lbs. gain 33%	2-23-40	2 months 5 days	Yes	No adjustment	—	Eighth grade	Church of Christ	Three injections since return. Unsuccessful attempt at suicide
5	28	D. P. Paranoid	Desire to live	1-10-39	2 years	1	10	4	None	Apprehensive	None	Good	2 lbs. gain 1.9%	No economic reasons	1 year 3 months	—	—	—	High school	Presbyterian	Good adjustment. Works in sewing room satisfactory
6	23	M. D. with D. P. base	Desire to live	8-25-39	3 years	2	14	3	None	Nauseated	None	Good	23 lbs. gain 20%	1-31-40	6 months 6 days	No	—	Apparently adjusted	High school	Methodist	Good report—follow-up letter
7	34	D. P. Cat.	Desire to live	9-3-39	9 years	3	7	2	None	None	None	Good	29½ lbs. gain 24.6%	3-12-40	4 months 9 days	No	—	Apparently adjusted	One year high school	Church of Christ	
8	18	D. P. Heb. (?)	None	9-13-39	10 days	1	12	2	Yes	Apprehensive	None	Good	37 lbs. gain 36%	1-27-40	4 months 14 days	No	—	Apparently adjusted	High school	Methodist	Good report in follow-up letter
9	40	D. P. with manic base	Sex	2-23-40	11 years	2	12	4	None	Great excitement	Jaw dislocated	Not improved	3 lbs. loss 2%	No	2 months	—	—	—	High school	Church of Christ	Patient has had two excitement episodes. Hydrotherapy and O. T. Now disturbed
10	30	M. D. manic type	Post-partum desire to live	11-21-39	7 weeks P. P.	1	19	1	Yes	Excited	None	Some improvement	4 lbs. loss 2%	No	5 months 2 days	—	—	—	One year college	Church of Christ	Not as noisy and unruly as on admission
11	34	D. P. Paranoid	Desire to die	8-6-38	4 weeks	1	18	6	None	Excitement	None	Not improved	9 lbs. gain 9%	No	1 year 8 months 17 days	—	—	—	Sixth grade	Baptist	Excited, resistive, noisy, suicidal
12	29	D. P.	None	6-20-39	4 years	2	13	2	Yes	Apprehensive	None	Some improvement	2½ lbs. loss 2%	No	10 months	—	—	—	Third grade	Church of Christ	Doing satisfactory work in sewing room
13	27	D. P. simple	Desire to die	6-4-31	10 years	1	26	11	Great fear	Nearly uncontrollable	Jaw dislocated	Some improvement	2 lbs. gain 1/7%	No	Approximately 9 years	—	—	—	High school	Jewish	Cannot see any improvement
14	31	D. P.	Religion	1-15-40	2 years	1	16	2	Great fear	Excitement and apprehension	None	Not improved	8½ lbs. loss 6%	No	3 months 7 days	—	—	—	High school	Christian Science	Noisy and disturbed with religious ideation
15	33	M. D. manic type	Sex and desire to live	10-9-36	9 years	3	21	4	Great fear	Excitement and apprehension	None	Not improved	8 lbs. loss 5.9%	No	3½ years	—	—	—	Two years college	Methodist	Noisy, disturbed, and apprehensive
16	39	M. D. manic type	Desire to live	9-11-39	8 years	4	14	1	None	None	None	Good	8 lbs. gain 8.3%	4-16-40	7 months	No	—	—	College	Church of Christ	Greatly improved on parole
17	32	Manic depressive with D. P. base	Religion	2-2-40	1 month	1	15	3	Great fear	Excitement and apprehension	Repeated jaw dislocation	Good	Same	3-23-40	1 month 21 days	No	—	Apparently adjusted	Seventh grade	Catholic	Apparently good adjustment
18	22	D. P.	Desire to live	11-18-39	1 week	1	6	3	Yes	Excitement	None	Good	No record	2-24-40	3 months 6 days	No	—	Apparently adjusted	Tenth grade	Church of Christ	Apparent adjustment
19	30	D. P.	Desire to live	12-2-39	2 months	1	7	1	Yes	No	None	Good	No record	3-23-40	3 months 21 days	No	—	Apparently adjusted	Eighth grade	None	Apparent adjustment
20	31	D. P. Cat.	Desire to live	12-23-39	6 months	1	7	Partial	Fear	Excitement	None	Improved	No record	3-24-40	2 months 1 day	Yes	No adjustment	—	High school	Church of Christ	Remained out sixty days. Could not adjust
21	25	D. P.	None	10-9-39	5 years	3	5	Abortive	None	None	None	Improved	No record	No	5 months	—	—	—	Eighth grade	None	No improvement. Metrazol discontinued
22	20	D. P.	None	12-14-39	6 weeks	1	4	1	None	None	None	Improved	No record	No	4 months 9 days	—	—	—	Two years high school	Episcopal	Improved and will probably be furloughed

There has been some discussion in the literature which indicates that an anticipatory fear in the use of metrazol is accompanied by beneficial results. In our opinion, however, this position is at error. Although it has not been true with every case, it is our experience that those patients who greatly feared the injection were not greatly benefited. In fact, in these cases it has been our experience that the amount of metrazol necessary to produce a convulsion varies in direct proportion to the extent of the fear. Furthermore, in the case of a few patients who went into a veritable panic and had to be restrained prior to the injection, the results were distinctly not encouraging.

It will be noticed in Chart I that from four to twenty-six metrazol injections were given. In general, it is our experience that if a patient has not shown evidence of some improvement in from six to ten injections the treatment should be discontinued. Again, in all cases where the initial injection fails to produce a suitable convulsion, a second, or, if necessary, a third, should be resorted to as soon as the patient is quieted from the effects of the earlier attempts. Often the patient who had no convulsion, or an abortive one, had to be restrained. Metrazol is a powerful stimulant, and in such cases results in a more excited, disturbed state than was present previously. This state of hyperexcitement may persist unless a convulsion can be induced. These second and third attempts, then, are significant aspects of the treatment program in so far as certain cases are concerned.

Of the twenty-two patients herein considered, ten, or about forty-five per cent, showed definite improvement. The average age of these cases at the beginning of the treatment was 27.6 years, and the average length of hospitalization was 5.1 months. Four, or about eighteen per cent, of the cases showed improvement; all went home, or were subject to a furlough. Two of them were returned to the hospital; one remained out sixty days and could not adjust. The other case who returned was given three additional metrazol injections, and attempt-

ed suicide unsuccessfully. The average period of hospitalization for these four was eight months, and the average age was 29.5 years. Two, or nine per cent, of the twenty-two showed some improvement. By this is meant that they entered as restive, noisy, untidy cases, but have quieted down and have been able to be moved to better wards. Their average length of hospitalization was 7.5 months and their average age 29.5 years. These three groups together make a total of sixteen patients who showed improvement of some type. This is seventy-three per cent of the group. The average age was twenty-eight years, and average period of hospitalization was 6.2 months.

In opposition to this group, six patients, or twenty-seven per cent of those under consideration, showed no improvement. The average age of this group was 31.6 years, and the average period of hospitalization prior to treatment was 30.1 months. Though the cases are too few for average differences to be statistically significant, and, consequently, though generalizations are precarious, attention probably should be called to the slightly greater average age of this group, and to the decidedly longer period of hospitalization.

There has been much discussion of the mode of action of metrazol. Friedman² believes that it is a central nervous system irritant. Jackson³ thinks that the convulsion causes a rise of systemic blood pressure, forcing open some of the small capillaries. Our own interpretation is that the blocking probably is due to anoxemia of the brain, this, in turn, being due to a lessened flow of blood through the higher brain centers. The mode of action of the metrazol, therefore, probably is a summation of the results of cerebral irritation, plus a rise of systemic blood pressure, plus some opening of smaller capillaries. Since this or any other currently discussed theory of the mode of action of metrazol hardly establishes a direct etiological relationship between the physiological changes and the psychological effects of the treatment in certain cases, it appears to the authors that there may be a need for a discussion of some

of the fundamental problems in personality and personality change.

For many years there has been a vast amount of argument both pro and con on the problem of instinct. On the one hand, we have positions such as that of the psychologist, McDougall,⁴ who has held that instincts were broad, general tendencies—the fundamental springs and sources of human behavior. On the other hand, we have a position such as that taken by the psychologist, Watson,⁵ who has completely discarded instinct, and finds no place for it as an explanatory principle in human behavior. Then, of course, in the field of psychiatry we have the Freudian school which traces all mental disorder back to some malfunctioning of the sex instinct. Adler, with almost equal fervor, places what has been called the self-regarding instinct as fundamental in any analysis of human behavior or mental disease. Still further, Jung has developed another psychoanalytic system in which instinctive malfunctioning or dysfunctioning is the primary determinant of behavior and behavior abnormality.

To the writers the major problem does not appear to be whether a given human urge or drive is instinctive or acquired, but rather whether it is present, and, if so, in what form. Thus, we might discuss the point all day and never prove the existence of a religious instinct. We do not have to consider it long, however, to find that there are countless individuals who have certain religious drives, habits, or instincts, as a result of which each is prone to behave in some more or less predictable manner. Once such a drive becomes a part of an individual, then any situation which causes its expression to be estopped or even unduly modified may well become a matter of major consequence in shaping the future existence, and even mental and emotional health, of the individual. Our thesis, then, is that no profit accrues from arguing as to whether certain human drives are instinctive or habitual in nature. From the standpoint of the practicing psychiatrist the main problem is to recognize that certain urges or drives ordinarily exist among normal indi-

viduals, and consequently may exist either in abnormal degree or in abnormal expression among many patients who come for diagnosis and treatment. In fact, when one considers the unyielding uniformity of certain social dicta, the clinician can be almost certain that if a given case reacts negatively, either passively or antagonistically, to these principles a diagnostic cue of major consequence is at hand. Although we cannot list all drives of basic significance, because, for one reason, these undoubtedly will vary somewhat from social group to social group, and from one maturity, vocational, and intellectual level to another, we should like to suggest a few drives which, in our opinion, are quite common, and which, incidentally, appear in certain instances to be significant in understanding the results presented in Chart I. Accordingly, we submit: the desire to live; the desire for comfort and security; love; hunger or food seeking; a biological sex urge; the desire for the approval of one's fellows; the desire to live in conformity with the dictates of a Higher Power, or a religious urge; and the desire for personal accomplishment, or pride.

Under normal conditions it appears that these drives within any given individual tend to achieve a certain type of balance so that one does not tend to take precedence over the other or exclude the other when the latter naturally would be expected to be manifested. In other words, as the individual lives in his social group, reacting as he does to a wide variety of different types of situations, first one and then the other of the various drives or urges becomes prepotent, but this prepotency is more or less temporary in nature. Furthermore, it apparently is a justifiable position to assume that the normal individual possesses a capacity for making certain selections, or for making intelligent judgments, and that he may choose in instances which one of the various ways of behaving he may evince. This choice, of course, will be influenced if not determined by the forces that act on him and by the consistency of his needs in his environment. Out of these various conditions we find what is called

the normal integrated personality evolving, a personality which is adjusted to social contacts and social forces.

Still further, it is undoubtedly true in the case of many individuals that they tend to exclude or inhibit what might be considered normal responses for themselves and others. These inhibited responses are of tremendous significance in many instances, because it must be realized that the inhibition is a mere blocking of the overt response, not an elimination of basic structural patterns, out of which the response would develop. Thus, we recognize a source of internal conflict or stress within the individual. On the one hand is a tendency to make a given type of reaction which might be considered "normal," and which even the individual himself so considers, and on the other hand is an inhibiting tendency which does not eliminate the structural predisposition for the normal response, but merely blocks the stress-relieving expression of the normal reaction. This means that there is always a kind of a constant and unfulfilled drive or urge for a given type of expression which the individual may not or even cannot make. If these basic patterns of conflict involve emotional reactions, there is a rather dynamic motivating element which often will result in a distinct personality aberration of some type. Out of this situation we find certain of the psychoses, the so-called functional or biogenic psychoses, developing. Whenever any drive which has been basic in the personality integration does not take its rightful role in behavior, internal stress or conflict likely will result.

The proposed interpretive theory, then, is one of the disturbances of basic drives. Whenever such a drive is overaccentuated, so that its frequency or force of expression tends to inhibit other normal reactions, or whenever such a drive itself is overinhibited in expression, so that the individual's normal urge never or rarely comes to fruition, mental and emotional or personality pathologies likely will result. Therefore, the perversion or malfunctioning on the part of a particular patient of some previously established drive will account for the spe-

cific mental trend which the patient exhibits. Hence, unless the shock in metrazol therapy affects the particular inhibitions associated with a specific patient's pattern of basic drives, it cannot or will not yield beneficial results.

CONCLUSIONS

1. It is our opinion that metrazol is not a cure-all by any means; that in well-selected cases, and where judiciously handled, it will bring satisfactory results, and hasten the period of remission; hence, very probably, it is worth the effort and chance taken.

2. Most of these patients on admission were underweight and showed a great lack of sufficient nutrition and vitamins, and some of our best results followed hand in hand with a satisfactory and noticeable weight gain as shown on the chart.

3. It is our opinion that fear is definitely not helpful, but rather a detrimental factor, and by consulting the chart one can see that there seems to be a definite ratio between excitement and fear. This was not true, of course, in every instance, but as the fear became greater the necessary doses became proportionately greater.

4. If a convulsion is not obtained, it is almost imperative that the injection should be repeated within, say, thirty minutes with a proportionately larger dose sufficient to produce a good and satisfactory convulsion because where these patients are so highly excited and in such great mental stress the convulsion acts somewhat as a "mental orgasm," taking away through the physical effort to the great pent-up stream of mental tension.

5. The technique of passive resistance, as we like to call it, and the checking over of the patient's physical condition will greatly preclude the possibility of any untoward results.

6. If improvement, or remission, has not been obtained in ten injections, treatment had better be discontinued to avoid any chance of a resulting pathology and the patient becoming worse.

7. It appears evident that every individual has certain basic drives or urges which are of major consequence in shaping the

whole course of his behavior and his personality adjustments. Some of these drives may be instinctive; that is, may result from chromosomal determiners, and others, almost without question, are habitual, or experiential, and, of course, are based on the particular individual's early childhood experiences, his training, or the specific environmental forces which have operated on him. Normally, the human individual correlates his various drives into one pattern of integrated behavior compatible with the demands which life makes upon him. When, however, some condition, either biological or social, results in the extreme expression, over or under, of one of these fundamental urges or drives, the individual is thrown out of adjustment and personality aberrations occur. There soon is established a vicious cycle where these manifestations both cause and result from certain mental and emotional stresses. It is here, then, that metrazol may be effective. If this treatment can produce a central nervous system shock of such a nature as to break

down common neurological inhibitions, or if it can produce a shock which is a release or relief from the mental and emotional stresses ordinarily suffered, the patient may be able to regain his orientation and re-establish less emotionally exhaustive modes of responses.

The role that metrazol plays in the interpretation of the vicious cycle is a mystery that haunts the curious and tempts the armchair philosopher.

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A TRIBUTE TO DR. WILLIAM DAVID HAGGARD*

PRESIDENT BAIRD: The next part of the program will be turned over to Doctor Tigert.

DR. H. M. TIGERT (Nashville): Gentlemen, this year we lost one of the most distinguished members of this organization by sudden death. He was not only a distinguished member of this association, but he was distinguished throughout the nation and had an international reputation. It is needless for me to say that I refer to Dr. William David Haggard.

The next number on the program would have been a paper by Doctor Haggard had his death not occurred. His associate, Doctor Kirtley, collaborated with him in its preparation and is here to read it. We are instituting an innovation in the program today, in that we are asking Doctor Kirtley, and he has consented, to read by title the paper which would have been read by Doctor Haggard were he here.

As chairman of the Committee on Memoirs, I shall ask Dr. Joseph F. Gallagher of Nashville to present some resolutions with reference to Doctor Haggard's death. Following that we shall be glad to hear from any members.

Dr. J. F. Gallagher read the following tribute to the memory of Dr. William D. Haggard:

"No one but his intimates will know what the loss of Doctor Haggard, as a man of the rarest and most delightful gift of friendship, means to those who were near him. But an immense public, both professional and lay, know very well what the quality of his thought and his attitude toward medicine and citizenship meant and mean in a field in which he was a leader.

"Viewed in the light of modern standards, his formal education was meager, so it may be said in this sense he was self-educated; but no one can gainsay the fact that his knowledge of medicine, in the practical aspects not only, but in the fundamentals as well, was complete. Endowed with a receptive mind and a retentive mem-

ory, he was quick to learn and retain that which came to him through study and contact and observation. With equal celerity and rare discernment did he adopt advanced methods worth while in the diagnosis as well as the treatment of disease in all its aspects.

"Augmented by a brilliant intellect, his personality ran the whole gamut of the tones and overtones of a virtuoso in the chromatic scale of individuality, and never was there a discordant chord. His adaptability to any circumstance bore constant evidence of his versatility, and whether he was among the highest or the lowest of the low, he was, despite his stature, a commanding figure. His art of conversation, linked with a gift of repartee and sense of humor, made an impression on those with whom he came in contact not easily forgotten. He loved the beautiful, the elegant, and everything that he attempted was done in the manner grand.

"For relaxation he enjoyed reading literature of the nonscientific sort, especially if it contained a vein of humor; but more than that, he loved his writings. And while his papers were numerous, it cannot be said that they were profound or, at times, quite original. But his style was distinctive and his essays had a lilt and spirited rhythm which made them always attractive.

"He died not too close to the sunset of life, so that the lengthening shadows of his unusual talents and individuality were plain to view and not obscured by the gathering dusk of a falling night of mental darkness. Thus the memory of him by those he loved, and was loved, lives in happy and undying remembrance.

"The end came as he had often wished in life that it would come: that when the cold and icy hand of death should be laid upon him, it would be done quickly, quietly, and in solitude. And so at the very last, his every wish was fulfilled."

There is no death!
What seems so is transition.
This life of mortal breath
Is but the suburb of the life elysian,
Whose portals we call death.

*From the transactions of the Tennessee State Medical Association, Chattanooga, April 9, 10, 11, 1940.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of
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H. H. SHOULDERS, M.D., Editor and Secretary

SEPTEMBER, 1940

THE ISSUE

SHALL PATIENTS AND DOCTORS RETAIN THEIR FREEDOM OF JUDGMENT IN THE MATTER OF MEDICAL CARE, OR SHALL THIS FREEDOM BE SURRENDERED TO SOME GOVERNMENTAL AGENCY?

EDITORIAL

MEDICAL MILITARY PREPAREDNESS

There are two problems of major importance, with which the medical profession is confronted at the present time. One is that of military preparedness. The other is that of securing the adoption of the legislative program of the Association by the Legislature of 1941.

The first step in the direction of military preparedness is that of completing the census, or survey, of the medical personnel and skill in the country. Our information is that the survey is being completed as rapidly as possible.

Information has come to the office to the effect that a number of doctors in Tennessee failed to receive the form sent out by the American Medical Association committee. This is unfortunate, but it is not a valid excuse for failing to fill in the form. The Committee on Military Preparedness of the State Association is now in position

to supply those who have failed to receive them. A post card addressed to the Association headquarters bearing a request for a form will be sufficient.

The Committee on Military Preparedness of the Tennessee State Medical Association is composed of the following members:

Dr. W. C. Dixon, Nashville, Chairman.

Dr. C. M. Hamilton, Nashville.

Dr. H. H. Shoulders, Nashville.

Dr. Lee K. Gibson, Johnson City.

Dr. R. B. Wood, Knoxville.

Dr. Franklin B. Bogart, Chattanooga.

Dr. J. R. Thompson, Jr., Jackson.

Dr. E. H. Baird, Dyersburg.

Dr. J. B. Stanford, Memphis.

The executive committee of the Defense Committee is composed of Dr. W. C. Dixon, Chairman; Dr. C. M. Hamilton, Chairman of the Board of Trustees; and Dr. H. H. Shoulders, Secretary-Editor.

The broad purpose of military preparedness is no different from the purposes which have actuated doctors in the fight that has been going on in this country for the past several years to combat the importation of some system of communistic medical practice.

There are a few citizens, of course, who are able to see some advantage in a communistic system of medical practice, but many of those are opposed to the adoption of communism as a whole. That, of course, is an inconsistency which is becoming more and more glaring right along.

The medical profession still stands where it has stood. We are opposed to the importation of Fascism or communism in medicine. We are also opposed to the importation of these "isms" as applied to anyone else.

Some of those who have promoted the idea of importing communism in medicine are not so vocal right now.

THE LEGISLATIVE PROGRAM OF THE TENNESSEE STATE MEDICAL ASSOCIATION

The summer is about past. Medical societies will be meeting regularly. The president and secretary of each and every component society have been supplied with a

copy of the basic science bill, together with a discussion of its provisions and effects.

The Legislative Committee is very anxious that every senator and representative be familiar with the bill and favorable to its adoption before they arrive in Nashville.

The job of securing the passage of the bill will be hard enough even when all this preliminary work has been done. It will be impossible unless it is done.

Some societies have already devoted a meeting to the consideration of these two major problems—viz., medical preparedness and the legislative program. It might be well for other societies to do likewise.

At any rate, the proper committee should be appointed to do this job as soon as the elections have been held. Where nomination is equivalent to election this can be done now.

WHAT IT MEANS TO BE A DOCTOR BY DWIGHT ANDERSON

The Medical Society of the State of New York maintains an excellent public relations bureau at the headquarters, 2 East One Hundred Third Street, New York City. Mr. Dwight Anderson is head of this bureau. He has written a little book entitled, "What It Means to Be a Doctor." It is a small book of eighty-seven pages divided into three parts.

The first part deals with what it means to doctors. The second part deals with what it means to Dr. Edgar James. In this chapter the author traces the career of Doctor James from pre-med through to an established practice. Part three deals with what it means to the public.

This is a very valuable and very readable publication. It will help every doctor answer the questions that lay people put with regard to the system of medical practice in the United States as we know it.

The book will also inspire any doctor to a higher appreciation of his calling. This is a fine piece of public relations work.

A WARNING TO DOCTORS

Dr. James N. Burch of Shelbyville has just advised us of a fraud committed on him and we are taking occasion to mention

it on the editorial page in the hope that other doctors will take notice and not be similarly defrauded.

The technique of the fraud was as follows: A Mr. B. W. Rosenbloom, allegedly a traveling salesman, arrived in Shelbyville and became ill in a hotel. Doctor Burch was called and attended him. He paid cash for the first visit, but later he presented a check drawn on his concern. The doctor endorsed the check, obtained the cash, and turned over to the patient the proceeds, less the balance of his bill. Mr. Rosenbloom repeated this stunt. Doctor Burch endorsed and cashed two of the checks amounting to \$120.00. When the checks bounced back Mr. Rosenbloom was gone.

Mr. Rosenbloom will likely bear another name in another town, so be on guard.

DEATHS

DR. WALDO MCCLISTER

Dr. Waldo McClister, Brighton; St. Louis College of Physicians and Surgeons, 1923; aged fifty-one; died August 14, 1940.

DR. PATTERSON EAST

Dr. Patterson East, Lafayette; University of Tennessee, College of Medicine, 1891; aged seventy-four; died August 25, 1940.

RESOLUTIONS

MEMENTO RESOLUTION FOR DR. REESE PATTERSON

The following resolutions were passed by the Judicial Council of the Knox County Medical Society which acts for the society when same is not in session. Same goes down on the minutes of the society as action of the society, and a page of the minute book with said resolutions shall always be kept in the archives of the society as a permanent memorial to Reese Patterson, M.D.:

"On June 24, 1940, Dr. Reese Patterson quietly passed away at the age of fifty-seven, and there passed out of our midst a good doctor, a man of sterling character and a Christian gentleman. His life was marked with those beautiful traits that it takes to make a cultured personality. Doctor Patterson was civic-minded and did valuable work in some of our best civic clubs. He loved his medical profession and limited his practice to ear, nose, and throat. He reached a high level of efficiency. He was a family man, being endowed with that pioneer instinct of love for those whose blood like his ran through their veins. He was an affectionate brother, a tender, cooperative, affable husband and a stern, but loving father.

"*Therefore Be It Resolved*, That the Knox County Medical Society accept the going of Dr. Reese Patterson as a great loss to society and to the medical profession of Tennessee.

"*Be It Further Resolved*, That a copy of this memento resolution be sent his esteemed brother, Dr. Robert Patterson, and a copy to his good wife and dear children.

"Submitted with a feeling of sympathy and reverence."

Sincerely,

EUGENE ABERCROMBIE, M.D.,

President, Judicial Council.

JESSE C. HILL, M.D.,

Secretary, Judicial Council.

MEDICAL SOCIETIES

Davidson County:

The Davidson County Medical Society opened the fall meetings with a picnic dinner on September 3, which was given in honor of Dr. L. W. Edwards, president of the Tennessee State Medical Association.

A number of interesting papers have been read. Those scheduled to be read are as follows:

September 17—"Endometriosis," by Dr. Sidney W. Ballard. Discussion by Dr. C. S. McMurray.

"Preoperative and Postoperative Treatment," by Dr. Alfred Blalock.

September 24—"Intestinal Obstruction," by Dr. H. H. Shoulders. Discussion by Dr. Theodore Davis.

October 1—"An Analysis and End Results of Gastroenterostomy Operations," by Dr. Elkin Rippey. Discussion by Dr. Jack Witherspoon.

October 8—"Resumé of the Present-Day Prostatic Surgery," by Dr. J. C. Pennington. Discussion by Dr. Henry Douglas.

October 15—"Arteriosclerotic Heart Disease," by Dr. W. R. Cate. Discussion by Dr. W. H. Witt.

Dyer, Lake, and Crockett Counties:

The Dyer, Lake, and Crockett Counties Medical Society met September 4. The following scientific program was unusually instructive:

"Abdominal Tumors of Infancy Causing Obstruction," Dr. J. Paul Baird, Dyersburg.

"Parasagittal Meningioma and Multiple Myeloma of Skull," Dr. O. B. Landrum, Dyersburg.

"Pernicious Anemia" (presentation of colored patient), Dr. W. E. Anderson, Dyersburg.

(Signed) C. L. DENTON, M.D.

Secretary.

Hamilton County:

The following papers are scheduled to be read during the month of October:

October 3—"Acute Perforated Gastric Ulcer," by Dr. Raymond Wallace.

"Surgical and Nonsurgical Conditions of the Rectum," by Dr. O. C. Gass.

October 10—"Tuberculosis of the Breast," by Dr. P. H. Dietrich.

"The Treatment of Female Sterility," by Dr. E. E. Reisman, Jr.

October 17—"Medical Aspects of Gall-Bladder Disease," by Dr. Fay B. Murphey.

"Choice of Anesthesia," by Dr. H. M. Ausherman.

October 24—Chattanooga Clinical Congress.

October 31—"The Acute Abdomen," by Dr. W. D. L. Record.

"Office and Surgical Treatment of the Cervix," by Dr. J. R. Martin.

Robertson County:

Dr. and Mrs. W. W. Porter were hosts at the regular meeting of the Robertson County Medical Society, Tuesday evening, August 20, at their home on Fifth Avenue, West.

Following the course dinner the meeting was presided over by the president, Dr. W. W. Winters. The scientific program was discussed by Dr. Harrison H. Shoulders of Nashville, secretary of the Tennessee State Medical Association, using as his subject, "The Basic Science Bill." Inasmuch as this is a legislative bill, the Hon. George W. Yost, representative-elect from Robertson County, was present to hear the discussion of the bill. Dr. Leonard W. Edwards, president of the Tennessee State Medical Association, of Nashville, discussed "State Medical Legislation and the National Medical Defense Program."

Other visitors present were Dr. J. R. Sory of West Palm Beach, Fla., and Dr. Theodore Morford of Nashville. Members of the society present were Drs. W. W. Winters, R. D. Moore, R. H. Elder, J. S. Freeman, W. L. Gossett, W. B. Dye, J. R. Connell, W. P. Stone, R. L. Mathews, J. S. Hawkins, C. M. Banks, and W. F. Fyke.

The next meeting will be Tuesday night, September 17.

Sullivan-Johnson Counties:

The Sullivan-Johnson County Medical Society met in Bristol on September 4 with thirteen members and four guests present.

The scientific part of the meeting consisted of a round-table discussion under the following heads and by the following members of the society:

"Appendicitis," by Dr. L. B. Snapp.

"Cholecystitis," by Dr. W. R. Rogers.

"Peptic Ulcer," by Dr. W. M. Gammon.

"Traumatic Lesions," by Dr. N. H. Copenhaver.

"Enteric Obstruction," by Dr. H. W. Bachman.

These presentations were short and were discussed by the majority of those present.

All members who had not already sent in the American Medical Association questionnaires on medical preparedness were urged to do so.

(Signed) C. F. N. SCHRAM,
Secretary-Treasurer.

Washington County:

The Washington County Medical Society held its regular monthly meeting Thursday, September 5, at John Sevier Hotel in Johnson City.

The society unanimously approved the proposed "Basic Science Bill" that is coming up at the next session of the legislature and instructed the secretary to write letters to the proper representatives urging its passage.

Dr. Chas. Wofford of Johnson City was accepted as a new member.

Dr. Lee Gibson read a paper on "Appendicitis" and Doctor Scholl read a paper entitled "The Acute Abdomen." These papers were discussed by Doctors Poole, Parker, McBee, and Budd. There were seventeen members present. Dr. W. T. Mathes and Doctor Dyer of Greeneville and Dr. Polly Wofford of Johnson City were visitors.

On October 3, Drs. Harry Miller and J. G. Moss will present a surgical subject. Drs. H. B. Cupp and Lee K. Gibson will lead the discussion.

(Signed) WALTER D. HANKINS, M.D.,
Secretary-Treasurer.

COMING MEETINGS

American Association of Obstetricians, Gynecologists, and Abdominal Surgeons, Excelsior Springs, Missouri, September 26-28. Dr. James R. Bloss, 418 Eleventh Street, Huntington, West Virginia, Secretary.

American Association of Railway Surgeons, Chicago, September 16-18. Dr. Daniel B. Moss, 547 West Jackson Boulevard, Chicago, Secretary.

American Hospital Association, Boston, September 16-20. Dr. Bert W. Caldwell, 18 East Division Street, Chicago, Executive Secretary.

American Medical Association, Cleveland, Ohio, June 2-6, 1941. Dr. Olin West, 535 North Dearborn Street, Chicago, Secretary.

Kentucky State Medical Association, Lexington, September 16-19. Dr. A. T. McCormack, 620 South Third Street, Louisville, Secretary.

Mississippi Valley Medical Society, Hotel Fort Armstrong, Rock Island, Illinois, September 25, 26, 27. Dr. Harold Swanberg, Quincy, Illinois, Secretary.

Southern Medical Association, Louisville, Kentucky, November 12-15. Mr. C. P. Lorz, Empire Building, Birmingham, Alabama, Secretary.

Tennessee Division of the Southeastern Surgical Congress, Shelbyville, Tennessee, September 17.

Tennessee Valley Postgraduate Medical Assembly, Knoxville, October 10 and 11. Dr. Jesse C. Hill, Knoxville, Secretary.

Tennessee State Medical Association, Nashville, April 8, 9, 10, 1941. Dr. H. H. Shoulders, Secretary.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By HUGH BARR, M.D.
Medical Arts Building, Nashville

Anesthetic Results in Over 500 Thoracic Surgery Operations. Phillips, Livingstone, and Engel. *Anesthesia and Analgesia*, January-February, 1940.

The data here presented are taken from an eleven-year survey of the anesthetist's analysis of 546 thoracic operations. Of all chest operations thoracotomy ranked first. This series include thoracotomies, thoracostomies, and rib resections. Ethylene and oxygen was used in 41.1 per cent, local 44.2 per cent, others 14.7 per cent. There were seven deaths in the thoracoplasties. Four of these were anesthetized with ethylene-oxygen.

Following thoracotomies there were seventeen deaths, fifteen of which received local anesthetics. Twelve of these cases were serious or emergency poor risks. Operations upon the heart, pericardium mediastinum, and esophagus were generally done under local anesthesia. In chest operation nonrespiratory depressant premedication and relative nontoxic anesthetic agents such as ethylene-oxygen or local minimize morbidity and mortality. Mask or endotracheal increased positive pressure is seldom required in intrathoracic operations.

DERMATOLOGY

By A. H. LANCASTER, M.D.
Medical Arts Building, Knoxville

The Use of Sulfanilamide in Dermatology. Raymond P. Hughes, M.D., El Paso, Texas. *Archives of Dermatology and Syphilology*, 42: 1, July, 1940.

Doctor Hughes presents the history of sulfanilamide and its uses, discusses the mild and serious reactions and complications that may occur from

its use. Also he gives a complete review of the literature on its use in dermatology along with his own experiences with the drug. These are his conclusions.

"Apparently the drug is of definite value in the majority of cases of the following conditions: erysipelas, erythema multiforme, impetigo contagiosa, acute disseminate lupus erythematosus, chancreoid, and streptococcal lymphangitis. Sulfanilamide appears to be of value in some cases of the following diseases and worthy of further testing: chronic lupus erythematosus, lymphogranuloma venereum, sycosis vulgaris, and pemphigus."

Dermatitis Following the Wearing of Nylon Stockings.

Preliminary Report of Four Cases. S. J. Fanburg, M.D., Newark, New Jersey. *Journal of the American Medical Association*, 115: 5, August 3, 1940.

The author reports four cases of dermatitis of the legs and thighs produced by a certain brand of Nylon hose. Patch tests gave strongly positive reactions to the finished product and to the residue of an ether extract, but patch tests made with undyed and unfinished Nylon were negative. Therefore, the author believes the irritant was the dye or finish used in preparing the hose rather than the Nylon itself. The eruption in each case was follicular in character.

Although Nylon itself may not produce an eruption, another plastic, elasti-glass, is producing numerous cases of dermatitis. Doctor Zeisler reported several cases in the *JOURNAL* of June 29, 1940. I have seen such cases and all the dermatologists I have talked to have seen the eruption. It occurs about the wrist or calves from wearing wrist watch straps or garters made of elasti-glass.

FEVER THERAPY

By E. E. BROWN, M.D.
Doctors Building, Nashville

The Treatment of Resistant Syphilis by Chemotherapeutic Measures Supplemented with Artificial Fever. Edgar G. Ballenger, M.D., F.A.C.S.; Omar F. Elder, M.D.; and Harold P. McDonald, M.D. *Bulletin: Crawford W. Long Memorial Hospital, Atlanta, Georgia*, September, 1937.

The authors believe that the best plan of treatment of syphilis now appears to be the simultaneous combination of artificial fever therapy and chemotherapeutic remedies. Fever therapy has been used chiefly in the treatment of late syphilis involving the nervous system. Knowing that artificial fever is a valuable agency in the treatment of syphilis even in its advance stages, it also makes the chemical attack on syphilis more potent.

One cannot see the advantages gained by thermo-chemotherapeutics without strongly believing that the spirochete, like the gonococcus, could be destroyed in a much shorter time than when chemical measures were used alone. Either chemo-

therapy or artificial fever therapy alone is quite destructive to spirochetes. Surely their combined use not only seems reasonable, but also greatly needed in at least all Wassermann-fast cases and in syphilis which has resisted the usual therapeutic measures.

We are convinced of the enhancement of the curative value of arsenic and bismuth preparations with fever treatment. To obtain the best results, the chemical agency in an adequate amount should be available in the patient's body when the fever is given. Bismuth should be given intramuscular eighteen to twenty-four hours before fever treatment. Arsphenamine should be given while the patient is in the fever cabinet.

They quote Neymann: "It is probable that the syphilitic virus can be eradicated from all parts of the human body by the simultaneous use of high fever, arsphenamine, and bismuth compounds."

He further states: "It has been shown that electropyrexia is an effective treatment for all forms of syphilis of the central nervous system."

INTERNAL MEDICINE

By R. B. WOOD, M.D.
By D. R. THOMAS, M.D.
Medical Arts Building, Knoxville

Symposium on Headache. Medical Clinic of North America, March, 1940.

Headaches Caused by Intracranial Lesions. A. T. Buntz.

The mechanism of the production of pain in intracranial lesions has been studied by various workers. Experimentally, pain is brought about by pressure, traction, heat, and electrical stimulation of the venous sinuses. The intracranial blood vessels are innervated by the sympathetics and the fifth nerves, while the dura is supplied by the fifth and some of the sinuses by the fifth, while the ninth and tenth cranial supply the sigmoid sinus and jugular bulb.

Wolf and Coworks found that headache following histamine was caused by distention of cranial arteries, and it is thought that since this type of headache and migraine are both relieved by ergotamine, the latter may be caused by the same mechanism. This same mechanism is present in fever and in hypertension.

Northfield has concluded that headaches of intracranial tumors are caused by an abnormal state of tension in the walls of the cerebral blood vessels. These intracranial lesions may be located in the meninges, brain, or blood vessels. They may be grossly grouped as:

Meningeal diseases: inflammations and tumors.

Blood vessel diseases: thrombosis, embolism, syphilis, arteriosclerosis, hemorrhage and aneurysm.

Diseases of the brain: encephalitis, abscess, tumors.

In addition there are posttraumatic and lumbar puncture headaches.

A scheme of investigation follows:

History: quality; location; duration; relation to factors such as use of eyes, fatigue, posture, menstrual function, and gastrointestinal upsets.

Physical examinations should include: (1) neurological; (2) blood studies; (3) urinalysis; (4) eye ground study; (5) X-ray skull, chest; (6) spinal fluid study; (7) ventriculography or encephalography.

Headaches of Nasal Origin. Paul M. Moore, Jr.

Contrary to opinion of many, both professional and lay, headache due to sinus infection is rare. Those of true nasal origin usually have a definite symptomatology and can be placed into the following group:

(1) Those due to nasal obstruction without actual infection; (2) those due to sinus infection; (3) those due to tumors; (4) those due to neuralgia.

As example of group I is the "vacuum type of headache," due to blocking of the nasofrontal duct with absorption of air in the cavity. This may be followed by transudation of fluids into the cavity. Treatment is directed to relief of obstruction.

Headaches due to sinus infection occur during the acute infection and are diagnosed by the location, the presence of a purulent rhinorrhea, use of X-ray, transillumination, and diagnostic irrigation of the suspected sinus.

Those due to tumors occur as result of pressure, obstruction or pressure on a nerve trunk.

Neuralgias originating from the nose are of the sphenopalatine or Vidian and nasociliary types. Vidian type is a neuralgic nature, usually unilateral, located in the root of the nose and in or about the eye and in upper jaw and teeth. It may extend back under the zygomas and mastoid, occiput, neck, and shoulder.

Nasociliary neuralgia is confined to the course of the nasociliary nerve, a branch of the ophthalmic division of the fifth nerve. It may be caused by pathology in the orbital cavity, the anterior cranial fossa, the ethmoid labyrinth, and the external nose.

To study headaches of nasal origin, one must employ anterior and posterior rhinoscopy, transillumination, and study with the nasopharyngoscope. The sinuses should be X-rayed, possibly irrigated and filled with lipiodol. Water followed with cocaine should be applied to the sphenopalatine ganglion.

Headaches in Cardiovascular Disease. John Tucker.

There is some clinical and experimental evidence that a change in dynamics of the intracranial pressure is responsible for the production of headache. High as well as low subarachnoid pressure may be responsible as is noted in expansive lesions of the brain or in the postspinal puncture headache or in the enteroptotic, undernourished, fatigued, etc.

The cardiovascular or renal patient rarely has headache unless there is cerebral edema, cerebral vascular hypertension, or hypertensive encephalopathy, and treatment is directed toward reduction

of blood pressure and improvement in kidney function.

Essential hypertension: In early stages there may be headache in occiput, ocular or temporal areas, or throughout the skull. Early morning headache relieved by coffee or stirring around is a common complaint. Gravity, gastric hyperemia, and apparently nervous shock, excitement, or physical effort may cause its return.

General measures are more important than drugs in treatment. Nervous relaxation is most important. Of drugs the (1) vasodilators as nitrates, benzyl benzoate, sodium thiocyanate, etc.; (2) sedatives; and (3) specific remedial agents.

Arteriosclerosis rarely causes headache unless accompanied by hypertension. This type is increased by sudden exertion and relieved by lying down.

Congestive heart failure probably does not often cause headache, but digitalis used in treatment often does. However, increased venous pressure from any cause, as mediastinal tumor, intrathoracic goiter with compression on superior vena cava may be a cause.

Spontaneous subarachnoid hemorrhage: This gives rise to sudden severe headaches that simulates meningitis. After the diagnostic puncture rest, sedatives are probably the best plan. Later hemorrhages usually end the picture.

Headaches from Arthritis of the Cervical Spine. C. L. Hartsock.

A characteristic type of headache is frequently caused by arthritis of the spine. In the proper age group this ranks in frequency with ocular and migraine types. It begins in the occiput, tends to spread upward and forward into the temporal regions as it becomes more severe. It can be localized at first in the insertion of the trapezius muscle into the skull and is more of a stiffness and soreness, and the presence of soreness to pressure at this point is of diagnostic importance. They occur periodically, last three or four days, and there is a tendency for continuous headaches for long sieges. Most often they come early in the morning and may wake the patient from sleep. They may be related to exposure to drafts, as car riding, hair drying, air-conditioned rooms, and sitting in position that requires tenseness of the muscles of the neck, as car driving, stenographic work, use of eyes especially if associated with eye-muscle error.

Crepitus often is present on turning the head. Flexing the neck increases the pain, while heat and massage gives relief.

Investigation of this group is along the usual lines for arthritis. Foci of infection and metabolic disturbances are to be sought for. Basal metabolic rate is often low; uric acid increase, biliary, and colonic stasis must be eliminated.

Headache and Head Pain of Ocular Origin. A. D. Ruedemann.

Unilateral headache or head pain is caused by eyes only if one eye is involved. If no inflammation is present, the cause may be ciliary spasm, a localized neuralgia, or spasm of a single muscle. With inflammation there may be iritis, iridocyclitis, uveitis, glaucoma, etc.

Pain from ocular inflammation may be in eye or referred over side of the head, behind the ear, or down the neck.

Near-sighted people do not have headache from eyestrain unless it is of a severe degree or unequal or after abuse of their eyes or mixed with muscle error.

Far-sighted people are apt to have frontal headache late in the day and after use of eyes.

Errors in refraction usually produces frontal, vertical, or bitemporal pain, which may be accompanied by dizziness. Errors of refraction accompanied by a muscle error is almost certain to produce symptoms.

Headaches of Gastrointestinal Origin. C. L. Hartsock.

The cause and effect relationship in this group requires careful analysis. As a rule, the headache is of the same origin as that which produces the upset in the digestive tract that accompanies the headache. Three solutions are possible: (1) the headache may be primarily in the central nervous system, with the gastrointestinal symptoms secondary; (2) the disease or toxic agent may be outside either domain with reflex symptoms in both; (3) the headache may be a true manifestation of some gastrointestinal disturbance. The first mentioned is more likely and the last should be thought of only if the oculist, neurologist, allergist, and syphilologist have ruled out their prior claim.

Functional disturbance of the digestive tract is more responsible for headache than organic. Of the latter, mild high intestinal obstruction with its resulting alkalosis is a possible cause. This obstruction may be at or below the pylorus, is frequently caused by ulcer, and suggests migraine in its nature of onset.

Biliary tract disease rarely is a cause of trouble and certainly surgery is never indicated for the relief of headache alone. The liver may be a conditioning factor in the absorption of protein molecules from the intestine.

Achlorhydria, through production of anemia or a fatigue state, may induce headaches. Caecal stasis by bands or adhesions may be a factor, but constipation *per se* is rarely a cause. The patient might be allergic to the end products of digestion. In obstinate cases sensitivity tests to possible bacteria should be done, and, if found, vaccines should be prepared. As yet, the whole subject is vague, full of theory, as unscientific as the claims of the diet faddist and colon irrigationist.

Headache of Syphilitic Origin. E. W. Netherton.

Syphilis is a common cause of headache either in the early or late stage and should be considered as a possible cause of headache where no other cause can be found. No definite localization is found; it is most often intermittent and is not as often thought characteristically found at night. Among other concomitant symptoms are dizziness, nausea, vomiting, insomnia, and psychic disturbances.

Early syphilis headache occurs either with the eruption or in the latest period of the first four years. It is generally meningeal in type. Stokes and Garner state that headache is present in about twenty-four per cent of cases of secondary syphilis and the spinal Wassermann is positive in about twenty-eight per cent, according to Wile and Marshall.

Headache of late syphilis occurs frequently and more often in the meningovascular type, and may precede by months the appearance of the more familiar signs. The intermittent occurrence and frequent association of nausea and vomiting and occasional vertigo often misleads one into a diagnosis of migraine. Only routine tests of blood and spinal fluid will avoid such errors.

Headache of Renal Origin. R. H. McDonald.

There is no diagnostic significance in headache in renal disease, being due to one of the many disturbances of the renal lesion. In the acute stage, it is the result of absorption of toxic products of the kidney and other areas. With renal insufficiency there is the added toxins of waste products acting on the meninges and finally the mechanical disturbances of cerebral circulation and changes in intracranial pressure.

There is a general type of headache usually in hemorrhagic Bright's disease from the toxins, perhaps having added the throbbing type due to increased blood pressure or an additional factor of inanition of the brain from a hypochromic anemia.

In chronic active cases headaches are the outstanding symptom and usually accompanied by anorexia, polyuria, nocturia, and perhaps edema. Blood pressure elevation is more of a factor than toxemia. With the onset of uremia the headaches become more pronounced.

A special type of headache is described under the term hypertensive encephalopathy. It may be preceded by visual or auditory aura and accompanied by nausea, vomiting, transient paresis, and rarely epileptiform convulsions. Localized cortical spasm is strongly suggested. In addition the complications of hypertension may cause headaches as cerebral hemorrhage, thrombosis, and edema of the brain.

OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.
Suite 234 Doctors Building, Nashville

Premature Elective Rupture of the Membranes. W. C. Keettel, A. W. Diddle, E. D. Plass. American Journal of Obstetrics, 40: 225, August, 1940.

This study was designed to permit an accurate comparison between patients who had late spontaneous rupture of the membranes and those who were subjected to induction of labor by elective early rupture of the bag of waters.

One thousand consecutive normal parturient women with cephalic presentations and with later spontaneous rupture of the membranes constitute group 1, while a similar number of normal women, in whom labor was induced by early elective rupture of the membranes, constitute group 2. Cephalopelvic disproportion and abnormal presentations were recognized as contraindications to artificial rupture. Breech and transverse presentations were excluded from the analysis, since by selection they would all fall in group 1 and might affect the results.

The results obtained in this series of 1,000 inductions of labor by premature artificial rupture of the membranes largely confirm our previous conclusion that this procedure is both efficient and relatively safe, but comparison with an equal number of uninduced labors does not lend support to the belief that labors induced in this fashion differ materially from those which start spontaneously. Certain apparent advantages gained under this type of induced labor are counterbalanced by other evident risks which appear to be connected directly with the technique employed.

Intrapartum infections and prolapses of the cord and arm were twice as frequent in the induced series, and this increase may probably be attributed directly to the procedure. On the other hand, the reduced number of post-partum hemorrhages in group 2 can scarcely be ascribed to any protective action of the induction technique, since the average blood loss among the entire group of patients was somewhat greater than in group 1 and was increased by extension of the latent period beyond six hours.

The effect of early membrane rupture on the duration of labor is not clear-cut and the statistical results are hard to interpret, since there seems to be a tendency both toward shorter average labors and for an increase in the number of unusually prolonged parturitions.

The incidence of true puerperal morbidity, as represented by the presence of fever for more than one day, was slightly higher in the induced series, and may be explained by the inevitable vaginal manipulations. There were, however, no serious infections and persistent fevers were practically as common in one group as in the other.

The lower fetal death rate in the induced group has already been explained on the basis of the smaller number of premature infants incident to the method of selecting patients for induction. It is interesting that only one infant was lost because of prolapsed cord in group 2 as against two in group 1; obviously, this is merely a coincidence. The data suggest that intracranial hemorrhage is less frequent among mature infants when the membranes are allowed to rupture spontaneously, but the size of the series does not permit such a conclusion, since several of the children were not subjected to autopsy.

The induction of labor by premature artificial rupture of the membranes does not significantly alter the birth process or affect the prognosis for the mother or her child.

OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.
Doctors Building, Nashville

A Mobile Embolus Between Two Arterial Bifurcations.
Kalt Bailliart and O. Saint Martin. *American Journal of Ophthalmology*, August, 1940.

The patient complained of almost complete loss of vision in the right eye. Ophthalmoscopic examination revealed at the first bifurcation of the superior temporal artery a small swelling of the artery resembling an aneurysm containing a small, yellow, highly refractive point. When, during application of the dynamometer the pressure reached seventy millimeters, the swelling flattened out and the small, yellow point then moved along the axis of the artery toward the papilla for about one millimeter and disappeared. This effect could be produced at will by pressure with the dynamometer or finger. The authors note that the phenomenon is, to their knowledge, unique, and further that it proves the reality of embolism as a cause of obliteration of the retinal arteries.

PEDIATRICS

By JOHN M. LEE, M.D.
Doctors Building, Nashville

The Treatment of Meningitis Due to Hemophilus Influenzae (Pfeifer's Bacillus). Janvier W. Lindsay, M.D.; E. Clarence Rice, M.D.; and Maurice A. Selinger, M.D. Washington, D. C.: *The Journal of Pediatrics*, August, 1940.

Meningitis due to hemophilus influenzae is rare in adult life, but excluding tuberculous meningitis, it is the most common form of meningitis in children under two years of age. Its prevalence roughly coincides with the incidence of respiratory disease.

Because of the age of these patients there is a lack of leading symptoms, this resulting in delay

or failure to make the diagnosis. The commonest initial symptoms are vomiting, stiff neck, increased or absent reflexes, irritability, cough, convulsions, semicoma, Kernig's sign, coma. Finding of the causative organism in the spinal fluid is necessary to a diagnosis. The white blood cell count may vary from 5,000 to 35,000.

Pittman demonstrated that the influenza bacillus found in meningeal infections is a different type from that found in respiratory infections. That may explain the failures in treatment of these cases with anti-influenza serum made from influenza bacilli recovered from respiratory infections. Fothergill's work tends to confirm this explanation, and he also demonstrated that a serum made from virulent meningeal strains of the organism needs to be activated by the addition of human blood serum to make it effective as a therapeutic agent. The authors used serum complement from the guinea pig in some cases when human serum was not available. They feel it is inferior to human serum as an activator.

Since 1937 the authors have treated thirteen cases of this disease with six recoveries and seven deaths, a mortality rate of 53.85 per cent. Their method was to drain off as much spinal fluid as possible and intrathecally inject ten to twenty cubic centimeters of a two-to-one mixture of influenza antiserum complement. From thirty to sixty cubic centimeters of specific antiserum is given intravenously in normal saline solution, the same dose being given intramuscularly or intravenously the next day. Intramuscular injections of serum in amounts from ten to thirty cubic centimeters have been given in some cases for four consecutive days. Sulfanilamide and more recently sulfapyridine are administered as soon as possible. The intraspinal treatment is continued daily until the spinal fluid remains sterile for at least two days.

In addition to the specific serum and chemotherapy, blood transfusions are given as indicated. Fluid intake is maintained by hypodermoclyses and from 150 to 300 milligrams of cevitic acid daily are prescribed.

Tables showing results reported by other writers in the treatment of influenza meningitis using various methods give mortality rates varying from 33.3 per cent to 100 per cent.

ROENTGENOLOGY

By FRANKLIN B. BOGART, M.D.
Medical Arts Building, Chattanooga

Evaluation of Various Diagnostic Procedures Used in the Study of the Breast with Particular Reference to Roentgenographic Examination. Hunt, H. B., and Hicken, N. F. *Radiology*: Vol. 33, No. 6, p. 712, December, 1939.

The anatomy of the breast is reviewed and the common pathological conditions enumerated.

The importance of a careful case history and routine physical examination is discussed.

Transillumination of the breast is discussed. The source of light must be a powerful one of the type developed by Cutler. The method is of greatest value in the recognition of serous cysts and in revealing intraductal hemorrhage associated with papilloma. Fibroadenoma cast a fairly distinct, well-outlined shadow. An infiltrating scirrhous carcinoma, two or three centimeters in size, shows a poorly delimited dense shadow merging with the matrix of the breast. Small carcinomas present no changes. Compact malignant tumors cannot be differentiated from benign tumors.

Plain roentgenography of the chest gives valuable information in bulky obese breasts where palpation and transillumination are not satisfactory. The various lesions encountered in the breast are enumerated, and their characteristics, as revealed in the plain roentgenograph, are discussed. Alromammography, a roentgenogram made after the injection of air or carbon dioxide into the perimammary tissue, is discussed. The differential diagnostic points of the various lesions with this technique are discussed.

Intraductal contrast mammography is discussed in detail. This procedure has been developed by the authors and consists of the injection of a contrast media, skiodan, into the individual ducts by catheterization with a very small canula. The procedure is indicated only in a case of a patient with a discharge from the nipple. It is contraindicated in case of acute infection, obvious carcinoma, occlusion, or deformity of duct at the nipple by any cause, and by technical difficulty in entering the duct. The characteristic findings for the various lesions are discussed.

The importance of roentgenographic discovery of metastatic lesions resulting from breast carcinoma is discussed.

The limitations of roentgenographic examination are discussed, and the fact pointed out that it is not offered as a substitute for other methods of examination, but to supplement them.

The importance of biopsy is emphasized. When incisional biopsy is used, it should be done in an institution where a frozen section can be made and a quick report obtained, and an immediate appropriate surgical procedure carried out. The place of the aspiration biopsy is discussed.

SUMMARY

1. The fundamental importance of a pertinent history and thorough physical examination in the diagnosis of mammary lesions is emphasized. Roentgenographic evidence must be correlated with clinical findings for full evaluation.

2. Roentgenographic examination of the breast offers diagnostic evidence in certain border-line lesions, being most helpful in recognition of lipomas, fibroadenomas, intraductal papillomas, and communicating cysts.

3. Plain films of the breast differentiate lipomas from other tumors by the high radiolucence of fat. Examination of the bulky breast may be assisted by roentgenographic demonstration of the general contour of deep lesions and visualization of non-palpable lymph nodes.

4. Carbon dioxide insufflation demonstrates encapsulation of fibroadenomas and fixation of tissues by infiltration lesions.

5. Cysts can be diagnosed by aspiration and their relations and inner contours demonstrated by injection of gas.

6. Injection of skiodan into discharging lactiferous ducts demonstrates intraductal papillomas, dilated ducts, and collapsible communicating cysts. Intraductal injection of thorotrast is condemned.

7. Biopsy is indicated in all lumps of the breast or axilla in which there is any doubt regarding the benignity of the lesion.

8. Diagnosis should be accurately established by biopsy prior to mastectomy, heavy radiotherapy, or dismissal of a patient as an inoperable case of cancer.

COMMENT BY ABTRACTER

All of these procedures are useful in certain cases and may furnish useful information. In the average case, a good history, physical examination, and possibly an examination by transillumination will furnish the essential facts on which to reach a decision as to therapy. In the case that can be diagnosed clinically as malignancy, or in which malignancy is strongly suspected, preoperative roentgenotherapy should be given to be followed by radical surgery and postoperative roentgenotherapy (unless all the roentgenotherapy is given preoperatively).

In these cases where the diagnosis is very doubtful and seems to indicate the probability of a benign lesion, a biopsy which is examined by frozen section should be done and immediate appropriate surgery carried out. Such cases which reveal carcinoma should receive thorough postoperative surgery.

SURGERY—GENERAL AND ABDOMINAL

By BATTLE MALONE, II, M.D.
1400 Monroe Avenue, Memphis

A Basic Understanding of Varicose Veins. John J. McCallig, M.D., and Wm. W. Heyerdale, M.D. *Journal of American Medical Association*, 115: 97 (July 13), 1940.

"This article is being presented primarily for the benefit of the general practitioner in an attempt to clarify any confusion that may exist concerning the tests used in the examination of patients who have varicose veins." Recent literature reveals modifications, as well as different interpretations of the classic Trendelenburg test, and several other

tests have been added. Here an attempt is made to find out what is wrong anatomically and physiologically and to discard the practice of using a man's name to designate the several tests.

The great saphenous system is first investigated. With the patient standing with legs fully exposed upright before the examiner, the fingers of one hand are placed over the great saphenous vein at the fossa ovalis, while the fingers of the other hand percuss the dilated segment of vein in the leg below. If there is a definite strong impulse felt, incompetent valves and a dilated main saphenous trunk are suspected. If the procedure is reversed and percussion is made over the fossa ovalis, giving use to an impulse which travels to the fingers below, it is certain that the valves are incompetent. The lesser saphenous system too is investigated in the same manner. To confirm these findings a tourniquet may be placed around the highest accessible portion of the thigh while the leg is elevated. Then with the patient standing, if the veins fill rapidly from above downward after release of the tourniquet, it is known that the valves do not hold. The results of this test should be recorded as "competent" or "incompetent" rather than positive or negative. Treatment of incompetence of the great saphenous system consists of ligation of the great saphenous vein at the fossa ovalis and exactly at the saphena-femoral junction, followed by injection of a sclerosing fluid into the dilated veins.

Incompetent communicating veins between the saphenous and femoral veins are relatively uncommon. After the leg is elevated in order to allow the veins to be drained of their blood by gravity, a tourniquet is placed high on the thigh. The patient is allowed to stand upright, and if the varicosities fill rapidly within thirty seconds while the tourniquet is still in place, it is assumed that there has been an overflow from the deep to the superficial circulation. Again it is emphasized that the result should be stated as that of competence or incompetence rather than "positive" or "negative." It is believed that such a condition is corrected by properly treating the superficial circulation by ligating the saphenous and subsequent injections with sclerosing solutions.

Persistent occlusion of the deep veins is a comparatively rare condition, but it does occur. It is usually accompanied by edema of the extremity and cutaneous changes. If these are absent even with a history of deep thrombophlebitis, one should proceed with caution in treating varicose veins in such an extremity. The patency of the deep circulation is best determined by applying a Para gum rubber bandage to the leg from the instep to just below the knee or as far up the thigh as is indicated. The patient is then instructed to walk about with this in place and to note whether any pain is experienced. If a block in the deep circulation is present, severe pain will follow exercise after application of the rubber bandage, and this

is an absolute contraindication to obliterating the superficial system.

UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.
By G. A. WILLIAMSON, JR., M.D.
307 Doctors Building, Knoxville

Urinary Lithiasis in Infancy and Early Childhood with Report of a Case Occurring in an Infant of Twelve Months. Frank Coleman Hamm, M.D., F.A.C.S. Brooklyn, New York: American Journal of Surgery, August, 1940.

Improved methods of diagnosis of urinary tract pathology in children have revealed an astonishing number with diseases requiring surgical treatment. Such conditions include practically all the diseases found in adults.

Calculi in children are encountered less frequently in North America and England than in Asia and southeastern Europe. Bugbee and Wollstein reviewed 4,000 necropsies on infants and found renal calculi in thirteen, one of whom was only eleven days old. Clinically, Campbell found eight cases of calculi in a group of 580 children. Lagenbeck reported a vesical calculus in a six months' fetus. Andre, Hinman, and Brown each reported cases of urinary calculi in children from eleven months to three years of age.

With these observations, it is apparent that careful urologic studies in infancy and childhood will reveal calculi more frequently than is usually believed.

This writer reports a case of a male infant twelve months of age who had been ill for one week with fever and severe pain in the abdomen. On admittance to the hospital the temperature was 105 degrees Fahrenheit. The urine contained many pus cells and a few red blood cells. On deep palpation of the abdomen a mass could be felt on the right side. He was very toxic and had a marked elevation of his white blood cells. A plain roentgenogram and an intravenous urogram revealed a large calculus in the lower third of the right ureter. This was removed by operation and the patient made a prompt recovery.

A brief discussion of the etiology of stone formation is given.

The treatment of urinary calculi in infants is the same as in adults and the results are equally as good.

BOOK REVIEW

Gynecological and Obstetrical Pathology. Emil Novak, A.B., M.D., D.Sc. (Hon. Dublin), F.A.C.S.

There has been a dire need for a book covering this increasingly important subject and Doctor Novak has covered this in a concise, well-worded,

easily-read, comprehensive manner. No doubt much thought was given to the method of presentation, scope, and size, for you simply float through the book, realizing that here is an opportunity of really gleaning a vast amount of knowledge from one who has spent his life in the realm of gynecology and obstetrics.

In the very beginning the author gives the reader a beautiful picture of the normal endocrine system, simplifying the origin and the effect of the hormones. I am sure that this one chapter alone will melt away the fog surrounding the endocrine products so that many a practical physician will be able to apply his knowledge in such a way that he will obtain results. Pathology of the female organ is preceded by the normal histology. The author has very wisely included ectopic pregnancy and abnormalities of the placenta.

This one volume contains 471 pages, 427 beautiful illustrations, both photomicrographic and gross, there being nearly one illustration to a page. I am sure that there are no gynecologists, obstetricians, pathologists, and general practitioners who will not be enthusiastic on buying Doctor Novak's new book. Published by the W. B. Saunders Company at the price of \$7.50.

HAMILTON V. GAYDEN.

Medical Nursing. Edgar Hull, M.D., F.A.C.P., Clinical Professor of Medicine, Louisiana State University School of Medicine; Visiting Physician, Charity Hospital of Louisiana at New Orleans. Christine Wright, R.N., B.S., Graduate of Davis-Fischer Sanatorium, Atlanta, Georgia; Instructor of Nursing Arts, Charity Hospital School of Nursing, New Orleans, Louisiana, 1928-1939; Public Health Nursing, St. Mary Parish Health Unit and Experience Center, Franklin, Louisiana, 1939. Ann B. Eyl, B.S., Assistant Dietitian, Cook County School of Nursing, Chicago, Illinois; formerly Instructor in Home Economics, University of Kentucky, Lexington; Therapeutic Dietitian, Charity Hospital of Louisiana, New Orleans; Dietitian, St. Vincent's Infirmary, Little Rock, Arkansas.

This book on medical nursing is well planned, being written by a physician, a nurse, and a dietitian in collaboration, thus giving varied viewpoints on the relationship of nursing to internal medicine.

An attempt is made to explain the principles involved in the various pathological conditions and a brief description of the diagnosis, prognosis, treatment, and nursing care required. Certainly this book presents the minimum that a well-trained nurse should know, and may be recommended as such.

C. S. T.

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THE ACUTE ABDOMEN*

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The term "acute abdomen" usually implies a pathological condition in the abdominal cavity that has arisen rather suddenly and requires for its relief surgical intervention. There are many such conditions; also there are many conditions that are not surgical which produce symptoms so similar to the surgical abdomen that they can be differentiated only by a painstaking history and careful examination. It will be my purpose here to mention some of the causes of abdominal symptoms and discuss briefly the more common lesions that require immediate surgery, not with the idea of producing anything that is new, but with the hope that the repetition of things we know may serve to keep us alert and ever conscious of the more common disease entities.

I believe that the majority of gross mistakes made in the field of surgery are made not so much because of a lack of knowledge or ability on the part of the doctor, but because of haste, carelessness, and a superficial examination.

In group I we will list the common acute abdominal lesions that require immediate surgical intervention:

1. Appendicitis.

2. Acute cholecystitis.
3. Intestinal obstruction.
4. Perforated peptic ulcers.
5. Acute pancreatitis.
6. Twisted ovarian pedicle.
7. Extrauterine pregnancy.
8. Mesenteric thrombosis.

In this group of lesions what is to be done must be done as soon as the diagnosis is made—even hours of delay may increase the mortality.

In group II we will list a group of fairly common abdominal lesions that usually require surgery, but not emergency surgery:

1. Acute cholecystitis.
2. Ureteral calculi.
3. Ruptured Graafian follicle.
4. Salpingitis.

It will be noted that cholecystitis has been listed in both groups for reasons that will be brought out under the discussion of cholecystitis. If one can be sure that the cause of the abdominal distress is due to one of the above diseases, one is justified in waiting further developments.

In group III we have listed still another group of diseases which produce abdominal symptoms, but in which surgery is contra-indicated:

1. Gastroenteritis.
2. Coronary diseases.
3. Arachnidism.
4. Infection of the respiratory tract.

*Read before the Tennessee State Medical Association, Chattanooga, April 9, 10, 11, 1940.

†From the Department of Surgery, University of Tennessee.

This last group must be considered and eliminated in all cases, as surgery here not only fails to relieve the symptoms, but frequently augments them, as well as embarrasses the surgeon. There are few experiences in the life of a surgeon more humiliating than to find the next morning that the patient he rushed to the hospital the night before for an emergency operation had pneumonia.

A differential diagnosis is not always easy and is sometimes impossible. If one can be sure before he operates that the symptoms are produced by one of the diseases listed in group I, one may be justified in operating without further delay. However, his mortality and morbidity will certainly be lowered by a more accurate diagnosis. For example, if a long mid-line incision is made for an exploratory and it be found that the patient has a ruptured appendix, his chances obviously are not as good as they might have been with a small muscle-splitting incision. A differential diagnosis should always be attempted, and a careful consideration of the following ten points will often help:

1. The history of onset—was it sudden, dramatic, or insidious?

2. Pain, usually the initial symptoms, should be accurately described; its type, whether sharp, dull, or colicky; its location, radiation, and relation to meals should be determined and not just dismissed as pain.

3. History of previous attacks or operations should be elicited.

4. Inquire as to whether vomiting or nausea is present, and as to whether the vomiting preceded the pain or the pain preceded the vomiting?

5. Temperature should always be taken.

6. The status and character of bowel movements should be noted.

7. The urine should always be analyzed.

8. A complete examination, including a rectal, should always be done. The man who neglects to put his finger in the rectum often gets his foot into it.

9. The age and sex of the patient will assist in differentiating many of the perplexing problems.

10. A complete blood count should always be done. It takes a little time and may add much light.

In discussing the diseases separately it shall be my purpose to review only the salient points of lesions requiring emergency surgery.

I. APPENDICITIS

The statisticians tell us that the death rate from this common surgical lesion is on the increase. Haynes tells us that in 1920 we had 11,000 deaths from appendicitis, whereas in 1937 we had 20,000 deaths. I feel that these statistics are misleading and can be attributed to our knowledge, rather than a lack of knowledge, of the disease. We recognize the disease more readily and report it more commonly. (Dr. H. A. Kelly could find only 141 cases of appendicitis reported in the literature prior to 1860. In 1858, Dr. Howard of Montreal wrote: "It is extremely unlikely for a practitioner to have but one case in his lifetime—at least in cities the size of Montreal.") I feel that if all the cases of "cramp colic" and "acute indigestion" that have taken their toll down through the ages had been properly diagnosed and recorded, our mortality rate today would compare favorably with those in the past. However, it is conceded that the death rate from this common malady is still too high and too many cases come to surgery late.

The typical cases of appendicitis offer no great difficulty in diagnosis or treatment:

1. The young adult without previous operation.

2. The generalized abdominal pain.

3. Nausea and vomiting after the pain and not before it.

4. Leucocytes, 9,000 to 20,000.

5. Localization of the pain in the lower right quadrant from two to four hours after onset.

6. Tenderness over Morris' point.

7. Slight rigidity in lower right quadrant.

8. Negative urine.

9. Negative chest.

10. Low grade temperature, not over 102, offers a diagnostic picture that is scarcely found elsewhere.

It must be remembered, however, that all cases of appendicitis are not typical and that some cases present the most difficult problems both in diagnosis and treatment. This difficulty is augmented by the obstructive type of appendicitis that gives little more than a few hours' warning before gangrene and rupture intervene.

The appendix may not be in its normal position; it has been found in every position of the abdominal cavity except the upper left quadrant. A leucopenia rather than a leucocytosis often coexists with appendicitis; some diagnostic aid may be gained in these cases by repeating the blood count at two-hour intervals.

The treatment of appendicitis is surgical, about that there is no division of opinion. In those cases where the appendix is definitely ruptured and has been ruptured for more than four hours, there is some difference of opinion as to whether the surgery should be done at once or deferred. In my hands the deferred operation with Ochsner's regime has given a lower mortality and morbidity. The patient should always be hospitalized, however, and of course should ultimately be operated. There are those who would defer the operation until a definite mass or abscess is formed and then institute drainage; there is another school who would defer the operation until the mass had formed and disappears by absorption and resolution. This, in my opinion, should be governed by the physical, economic, and intellectual status of the patient.

II. ACUTE CHOLECYSTITIS

Here again we have pain, leucocytosis, fever, nausea, and vomiting. The pain gradually becomes quite severe, however, and usually requires an opiate for relief. Instead of localizing in the lower right quadrant, the pain of gall-bladder disease becomes localized in the upper right quadrant and is often referred to the region of the right shoulder. The disease is more common in those above middle age, and is more common in women than men, in the

ratio of three to one. There is usually a history of previous attacks, of food dyscrasia, inability to eat fried or greasy food, and of gaseous distention—fair, fat, forty, and flatulent.

Treatment.—In my opinion, the treatment of acute cholecystitis rarely requires emergency surgery. However, there is some difference of opinion among surgeons on this point. One school holds that they should be treated as acute appendicitis, while the other holds the operation can usually be delayed with safety. As a rule, the inflammatory process tends to subside, and the risk involved in deferring operation is more than balanced by the safety and ease with which the operation can be performed after the inflammation subsides. If, after twelve hours, the pain has not subsided, but has become increasingly severe, then an emergency operation may be considered. I have never seen a generalized peritonitis result from gall-bladder disease *unless* there was surgical intervention. The reason for this, of course, lies in the anatomical position of the gall bladder. (That is between the liver, falciform ligament, stomach, duodenum, and anterior abdominal wall, where, after a few hours of inflammation, it is completely walled off from the remainder of the peritoneal cavity.)

III. INTESTINAL OBSTRUCTION

This subject is so big and so important that I regret we can no more than mention some of the salient points in its recognition.

1. In those cases of colicky abdominal pain with nausea, vomiting, and constipation, unattended by tenderness, rigidity, fever, or leucocytosis, the burden of proof is on him who would rule out obstruction.

2. With the stethoscope on the abdomen, loud peristaltic rushes will be noted at the height of pain.

3. X-ray picture made in the upright position will show gaseous distention not only in the stomach and colon where it is normally present, but in the small intestine as well.

4. If the abdomen is silent and the gaseous distention is noted throughout the in-

testines, we are most likely dealing with a paralytic type of obstruction.

5. X-ray aids in detecting the obstruction and the stethoscope tells you whether it is mechanical or paralytic.

Treatment of Obstruction.—Briefly, the treatment depends upon two factors—the condition of the patient and the type of obstruction.

In the mechanical type of obstruction the abdomen should be opened and the obstruction relieved as soon as the diagnosis is made, provided the patient is operable. If the patient comes in late—and, in spite of all that has been said and written about intestinal obstruction during the past twenty years, the majority of them still do—suffering from dehydration and chemical changes in the body fluids, then a few hours used to restore fluids and chlorides as well as deflate the intestinal tract with the suction syphonage not only render the patient a better surgical risk, but also make the operation less difficult. It must be remembered, however, that the suction syphonage, because of the relief it causes, frequently gives both doctor and patient a false sense of security. In those cases where the intestines have been overdilated for some time and have lost their tone, an ileostomy done after the fashion of Witzell just proximal to the obstruction will hasten the patient's return to normalcy; however, unless there is a definite loss of tone, relieving of the obstruction is all that is required.

IV. PERFORATED PEPTIC ULCER

Diagnosis as a rule is not difficult. In this condition the following points are emphasized as diagnostic aid:

1. The sudden, almost dramatic onset of pain which alarms and terrifies the patient.

2. Marked, boardlike muscular rigidity of abdominal wall.

3. Usually there is a history of an ulcer or indigestion.

4. Far more frequent in men than women—ratio of three to one.

5. Patient remains perfectly still, does not roll about in bed.

6. Patient is frequently in mild shock.

7. Rapid pulse; high leucocyte count.

8. X-ray in upright position shows gas under the diaphragm.

It has been my practice in these cases to close the perforation, put in a small rubber tissue drain, if the perforation is more than four hours old, and close the abdomen.

V. ACUTE PANCREATITIS

Fortunately this condition does not occur as frequently as the other diseases in this outline. The diagnosis is difficult and often is not made until the abdomen is opened.

1. Rapid onset.

2. Severe pain in upper abdomen.

3. Vomiting.

4. High leucocyte count, usually above 20,000.

5. Severely ill patient.

6. Bloody fluid on paracentesis of abdominal cavity in mid-line.

Treatment.—The treatment is as unsatisfactory as the diagnosis. If one is sure he is dealing with acute pancreatitis, conservative or nonoperative treatment probably avails as much. The mortality is high—fifty per cent. The operative procedures are:

1. Drainage of biliary tract.

2. Drainage of the lesser peritoneal cavity.

3. There is nothing to be gained by incising the pancreas itself, as it has no capsule.

VI. TWISTED OVARIAN PEDICLE

In this comparatively rare condition the following are helpful points:

1. Sudden onset often while at stool or straining from some other cause.

2. Severe and continuous pain in lower abdomen.

3. Normal temperature.

4. Rising leucocyte count.

5. Tender, palpable mass in region of ovary on bimanual examination.

6. Menstrual irregularity, usually slight flowing.

The treatment usually consists in removing both tube and ovary. Occasionally, if seen and recognized early, the organs may be saved.

VII. ECTOPIC PREGNANCY

In ectopic pregnancy the following diagnostic aids are recalled:

1. Amenorrhea from one to two months.
2. Slight vaginal bleeding.
3. A feeling of discomfort in pelvis.
4. Sudden and severe pain with distention when it ruptures.
5. Rigidity less marked than pain seems to warrant.
6. Pulse rapid and feeble.
7. Leucocyte count less than in appendicitis.

The treatment consists, of course, in the removal of the involved tube, and, if rupture with much blood loss, autotransfusion.

VIII. MESENTERIC THROMBOSIS

Mesenteric thrombosis is one of the more rare causes for surgical emergencies, but one that must be constantly kept in mind. Here again the diagnosis is most often made after the abdomen has been opened. It is also worth remembering that thrombosis in the arterial tree is more fulminating and devastating than thrombosis on the venous side. The following symptoms should suggest mesenteric thrombosis:

1. Arteriosclerotic individual.
2. Sudden and severe onset of abdominal pain.
3. Nausea and vomiting, possibly bloody.
4. Bloody diarrhea.
5. High leucocyte count, usually above 20,000.
6. Silent abdomen with distention.

The treatment requires resection of the involved loop of gut. If the involved segment of bowel is high, one should be sure to restore the continuity of the bowel at first operation, even though it be hazardous, lest the patient die of starvation.

In conclusion I can do no better than quote from the late Urban Maes: "I hold no brief for promiscuous surgery, but I do believe that in that type of case in which, after every diagnostic aid has been exhausted, the pathology is still obscure and the patient's condition growing steadily worse, an exploratory operation is a truly conservative procedure."

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DISCUSSION

DR. E. H. BAIRD (Dyersburg): Doctor Kelly has presented a clear and concise discussion of "The Acute Abdomen," and I am sure we all enjoyed it. There are a few points that I might emphasize as presented by the doctor.

In the first place, acute abdomen, in country and smaller towns, is somewhat different and usually presented under somewhat different circumstances and environments than in the larger cities. There is the question of the night and country calls where proper facilities, laboratory, etc., are not easily obtainable. Under these environments, and if proper time for observation and re-examination cannot be given, the case should be referred into the hospital or proper channels where more time and observation can be given to the case. The old habit of giving a hypodermic and telling the patient, "If you are not better by tomorrow, let me know," should be discarded, and many cases that proceed to a serious peritonitis will receive the proper treatment at the correct time.

Upper abdominal lesions are not always so easily to differentiate, and mistakes can readily be made by competent men, as has been my observation over a period of thirty years of surgery.

The acute pancreatitis cases, the ruptured ulcers, and gangrenous and ruptured gall bladders do not always present the typical history. The acute gastritis symptoms often found in the violent appendix cases are sometimes passed over with the remark that "same will soon subside," and the case is given treatment, part of which is usually the saline or oil purge, and the case proceeds to the peritonitis stage. This identical picture came under by observation during the past month. The patient was a prominent man, and the physician usually careful and capable, but death ensued. Practical sense and sound surgical judgment must be used in all intra-abdominal lesions. The traumatic abdomen should be watched very closely, as many serious injuries occur. The question of whether the acute gall bladder should be operated or not operated has been debated pro and con for many years. Internists and surgeons alike swing from one extreme to another, as a rule, the same surgeon or internist reversing his opinion of this matter frequently.

We have available no tests in the clinical laboratory, neither will physical signs and symptoms give definite information as to whether the patient has an acutely inflamed mucous membrane lining the gall-bladder wall or a deeper infection. As you know, a small percentage of cases diagnosed acute cholecystitis have proceeded to the stage of gangrene and, if allowed to continue unoperated, as a rule, will result in rupture and death of the patient.

It is my contention that in a general way most cases of cholecystitis should receive medical treatment, but a small per cent of cases should require early surgery first, and then medical treatment. In doubtful cases where the question of surgery or medical treatment should be instituted early in the onset, it is our practice, after proper examination of patient, to operate and occasionally have a patient die rather than not operate, which is almost certain death if rupture of the gangrenous gall bladder takes place. The doctor says he has never seen a case of generalized peritonitis result from gall-bladder disease. Well, I have. I have seen several old abscessed gangrenous gall bladders perforate and spill infection and stones into the peritoneal cavity and general redness and pus all over the peritoneal cavity with all the symptoms and signs, both general and local, present that *we* diagnose as peritonitis.

DELAYED OPERATION

As regards appendicitis, which constitutes a large percentage of acute abdomens, our statistics, as well as others as will be presented in a paper farther on in this meeting, compare very favorably with those advocating delay. It was my privilege to attend Doctor Oschner's and Dr. John B. Murphy's clinics some thirty years ago when this same subject was debated pro and con. If you can tell me just what progress an appendix has made towards peritonitis and just exactly the amount of typhlitis or perityphlitis that has taken place, you can see through the abdominal wall better than I can. In addition, I do not like to have a layman ask me what this delayed or nonoperative treatment for appendicitis is, and unless the differentiation is made very clear, it gives a loophole to anxious relatives and to the tired, overworked, and careless practitioner to delay and treat by the hoping method.

The same remarks apply to the obstructive cases. During the past month we operated a case of this kind—home in the North and returning from Florida vacation. History of previous operation: repeated and recurring cramps after morphine. This case passed through two towns and cities where there were hospitals, was given morphine five different times by different doctors before the seriousness of the case was impressed upon the patient. Luckily the beginning gangrene had only progressed to the point where the patient was saved

by doing extra surgery and extra preoperative and postoperative work.

I was glad to hear the doctor recommend the use of the stethoscope in suspected obstructed cases. It is an important aid that has been overlooked by many diagnosticians and surgeons.

In conclusion, I wish again to compliment Doctor Kelly on his very comprehensive and able paper, and sorry that I had to differ with him on one or two of the treatment points.

DR. R. L. SANDERS (Memphis): Gentlemen, I am sure that all of you appreciate the fact that the problem which Doctor Kelly has discussed is a surgical nightmare. Probably no condition in all medicine requires more diagnostic acumen and surgical judgment than the acute abdomen. Doctor Kelly practically settled the matter with reference to acute perforations incident to peptic ulcer in stating that the abdomen should be opened immediately. There are other conditions, however, wherein one might be in doubt as to the proper course to pursue. One of these, as Doctor Baird brought out, is acute cholecystitis, and another is acute pancreatitis.

At the meeting of the Western Surgical Association in Kansas City a few years ago, I presented an article on the subject of acute, subacute, and chronic perforations of the gall bladder. At that time, I reported forty-six cases of perforations. Since then I have encountered eight others, which represents an incidence of five per cent over a period of approximately twenty years.

Not all perforations take place in the peritoneal cavity; in fact, the majority are protected, as Doctor Kelly pointed out. Eventually, however, some of those which were originally protected penetrate into the peritoneal cavity, giving rise to peritonitis. Approximately thirteen per cent of the perforations in our cases did so. We must, therefore, realize that a perforated gall bladder always carries the danger of peritonitis.

One of the most debatable questions in surgery at the present time is whether or not to operate in acute cholecystitis. The findings of acute cholecystitis have been compared to those presented by a twisted ovarian pedicle, strangulated hernia, or an acute strangulation of tissue anywhere, in that in all of these there is a vascular disturbance, and edema and congestion of the tissues. In acute cholecystitis, we frequently encounter edema and swelling of the tissues about the cystic and common ducts and other structures in the region of the hilus of the liver. Often a stone is found obstructing the common duct. The vascular supply is likewise damaged, and, in many cases, the mucosa becomes gangrenous. I know of no operation from which recovery is more gratifying than from one for correction of a strangulated hernia, or for removal of an ovarian cyst with a twisted pedicle, or a gall bladder with an associated strangulation of the tissues. Formerly, I usually treated this type of cholecystitis conservatively in the hope that

the process would subside; in several cases, however, perforation into the peritoneal cavity ensued. In the presence of *sustained pain*, a gradual rise in temperature, and a systemic reaction, and an increased leucocyte count, I am now inclined to operate immediately.

In regard to pancreatitis, I agree with Doctor Kelly that, when the process has reached the acute fulminating stage, surgery is of little avail. I formerly drained the gall bladder, but further experience has led me to doubt the wisdom of that procedure; rather, I believe that simply placing the drain over the pancreas without incising it is sufficient.

I should like to call your attention to a method of treatment of acute pancreatitis which was suggested less than a year ago by a group in Rochester, New York. An analogy has been drawn between the parotid gland and the pancreas; they are similar in structure, and disease of either causes an increase in amylase of the blood. In acute parotitis, postoperative or otherwise, the gland is swollen and tender. As a rule, the reaction will subside and the process will go on to resolution under treatment by X-ray or radium irradiation.

The group in Rochester conceived the idea that, since the analogy between the pancreas and the parotid gland is so striking, irradiation might also be applied successfully to pancreatitis. The procedure was tried in a number of cases wherein the diagnosis could be reasonably established with gratifying results.

We have not used this treatment simply because we have not found a suitable case, but shall do so at the first opportunity. Any feasible measure which offers the hope of precluding the disasters which accompany surgery for acute fulminating infections of the pancreas is certainly worthy of consideration.

DR. E. G. KELLY (closing): I want to thank the gentlemen for their kind discussion. They let me down fairly light.

I do not want you to misunderstand me or to understand me as advocating conservative treatment in acute appendicitis. That is not what I intended to say. What I meant to say is that we do advocate conservative treatment after the appendix is ruptured and has been ruptured for four hours. In other words, it amounts to advocating conservative treatment in generalized peritonitis.

MEDICAL PARTICIPATION IN SELECTIVE SERVICE

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The nation through its representatives in congress has again decided to increase the armed forces of the United States in accordance with a fair and just system of compulsory selection in order that the obligations and privileges of military training and service may be shared generally. The whole purpose of selective service is to procure men for our land and naval forces with a maximum of efficiency, economy, and equity, and with a minimum of disturbance to the social, economic, industrial, and agricultural life of the nation.

THE CHARACTER OF THE SELECTIVE PROCESS

The salient characteristic of selective service will be that of democracy in action. Men will be registered, classified, and selected by boards composed of their neighbors who are empowered to determine for each registrant his liability for military service with fairness to him, the community, and the nation. The state and national selective service headquarters will be directing and coordinating agencies.

THE OPERATION OF SELECTIVE SERVICE

In general terms, the operation of the selective service is as follows: On registration day all men between certain ages will register at their polling places. The registration cards will be numbered serially by local boards. A national lottery will be held in Washington to determine the order in which men in each local board area are liable for selection for military service. The board then sends questionnaires to the registrants. On a basis of his completed questionnaire, the board tentatively decides whether the registrant should be classified as available for military service or should be put in a deferred classification. If the board classifies him as available, it causes him to be examined by its examining physician; if found physically fit, he is definitely classified as available. The registrant may appeal his classification and have his appeal decided by a board of citizens of his state. National headquarters, on

advice from the armed services, will issue a general call on each state to fill its quota. Each state headquarters will issue a similar call to each local board. The local board then selects the required number of available registrants in the order determined by the lottery and orders them to report at a fixed time to a military induction station. Each registrant who is physically and morally acceptable to the military is thereafter inducted into the military service.

EXEMPTIONS

The law provides in general that personnel of the armed services and alien diplomatic officials, consuls, and consular agents shall not be required to register. Exemption from registration obviously precludes selection and induction.

It also provides for certain exemptions from service for ministers of religion and theological students in particular, and for persons who have completed or who are in process of completing certain years of service in the Regular Army or active National Guard. Persons in this category, however, must register.

DEFERMENTS

Provision has been made for the deferment, but not the exemption from service, of additional categories of persons generally stated as follows: (a) the vice-president, governors, legislators, and judges of national and state governments; (b) any person holding an office whose continuance therein is found to be necessary in the maintenance of the public health, safety or interest; (c) those whose employment in industry, agriculture or other such occupation is found to be necessary to maintain national health, safety or interest; (d) those with dependents, and finally (e) those men found physically, mentally or morally deficient or defective.

DEFERMENT FOR STUDENTS

A general deferment from induction for service and training has been provided dur-

ing the school year 1940-1941 for any person who has entered on attendance in a course leading to a degree at a college or university which grants a degree in arts or science.

NO GROUP DEFERMENTS

The law specifically provides that no deferments will be made in the case of any individual except on the basis of the status of that individual, and further that no deferment shall be made of individuals by occupational groups or of groups of individuals in any plant or institution. It will thus be seen that the deferment of any individual whose exemption or deferment is not specifically provided by law will be decided by local boards on the merits of the case and the demonstration of the necessity for deferment. It is believed that such necessity can be demonstrated for residents and interns in hospitals, for key technical personnel in hospitals, and laboratories and for officials in state, county, and local health departments, and similar participants in matters of the public health.

CLASSIFICATION

Every registrant will be classified by local boards after due process into one of four general classes:

Class 1. Those available for service.

Class 2. Those deferred because necessary in a civil occupation.

Class 3. Those deferred because of dependent relatives.

Class 4. Those deferred by law or because obviously unfit for service.

THE ROLE OF THE PHYSICIAN

Inauguration of selective service brings a new responsibility to the medical profession and another opportunity of service to the nation. The role of the physician in the selective service mechanism will be to examine, to find, to evaluate, and to recommend. The local board and the appeal board will determine the final classification of all registrants. It is believed that the participation of the physician of the community in determining the physical qualifications of registrants will promote confidence in the fairness of the system and permit of a more accurate determination

of the ability of a man to perform military service. The intimate knowledge that the local physician has of the members of his community should be of marked assistance not only in the determination of physical fitness, but also in the detection of malingering on the part of men seeking to evade service.

There is a strong feeling in congress and throughout the nation that, since men are being called to military service at great personal sacrifice, selective service officials should be men who are willing to make an important sacrifice by contributing voluntary service, and that a process based on devotion to the national interest should not deteriorate into a job-holding organization. It appears very probable, therefore, that no compensation will be provided for members of local boards, boards of appeal, medical advisory boards, examining physicians or similar officials. Clerical employees will unquestionably be paid and will be thoroughly competent in order to free officials of petty clerical routine and leave them free to devote their time to their important responsibilities. Provision, however, has been made to furnish the supplies required in physical examination and to pay for those procedures necessary for the determination of a man's physical fitness, such as laboratory or X-ray examination.

PHYSICAL STANDARDS

It is the present intention of the armed services to accept for induction only those men who are fit for full duty. The physical standards of selective service, therefore, will be those of the using services, which in the case of the army are substantially those now governing enlistments.

It is probable that all men inducted during the coming months will be sent to the army for training and service. Army standards will accordingly be used. When men are required by the Navy and Marine Corps, the physical standards of those services will be issued and used. It is the general policy that men accepted by the army for induction shall be immediately available for full training and service and be free from acute communicable disease.

Many physicians in the selective service process will be confronted with a new criterion of judgment. The doctor in civil life is concerned in treating his patients so that they may continue their present modes of living and physical endeavor. The criterion of judgment of selective service is that the man shall be capable of performing full military service in any type of organization. This criterion may be epitomized by stating that the man, after proper hardening, must be able to walk fifteen or twenty miles, carrying fifty pounds on his back, without taking harm to himself in the process.

Since the decision as to the ability of any given registrant to perform such duty depends on the professional judgment of each physician who examines the man, it must be anticipated that there will be honest differences of professional opinion between the examining physicians of the local board and the examining physicians of the medical advisory boards; also between the examining physicians of selective service and the examining physicians on the military examining boards. These will be honest differences of opinion and must be expected and accepted. It is believed that they will be fewer than occurred in the World War, since the same standards of physical examination will be used by selective service and by the military examining boards.

LOCAL BOARDS

The basic responsibility of administration and determination will rest on the local boards, whose members will be selected from each of some 6,500 communities. These local boards will determine all deferments and exemptions and make the final and crucial classification, after local physical examination, which makes the registrant available for induction.

THE LOCAL EXAMINING PHYSICIAN

The physical examinations of selective service will be made by local examining physicians, who act as agents of the local boards for this purpose. When necessary, additional examining physicians may be appointed by the local board. The local examining physician will examine all regis-

trants sent to him by the local board according to the standards of physical examination which will be furnished him. He will note all deviations from the normal on physical examination forms and then interpret them in the light of the physical standards and in terms of the ability of the registrant to perform full military service. Thereafter he will record his recommendations to the local board as to the physical qualifications of the man to do full or limited military service. If the registrant possesses defects that disqualify him for any military service, that fact likewise will be entered. In those cases in which the local board has appointed additional examining physicians, it may be feasible in certain communities to form an examining group to facilitate and expedite the examinations.

MEDICAL ADVISORY BOARDS

Medical advisory boards will be appointed by the President, on the recommendation of the state, to provide an agency of advice and assistance to examining physicians and to assist appeal boards in determining matters of physical fitness which have been appealed from the decision of the local board by the registrant or by the government agent. The medical advisory boards will as far as practicable comprise internists, ophthalmologists, otolaryngologists, orthopedists, surgeons, psychiatrists, clinical pathologists, radiographers and dentists.

MALINGERING

The experience of selective service during the last war showed the necessity of constant vigilance to detect malingerers. Many men descended to self-mutilation and numerous other more ingenious but less harmful subterfuges to escape military service. Malingerers will doubtless be encountered in the coming operation of selective service. Regulations on physical standards mention many of the more common practices used by malingerers to feign disability and describe methods by which these may be detected.

THE MEDICAL TASK

The fall increment of some 400,000 men will be distributed according to quotas to

the several states and by each state headquarters to the local boards in that state. On the assumption that these 400,000 men will be equally divided among the 6,500-odd local examining boards, and utilizing the World War percentage of rejections by examining physicians of selective service and of the army, there will be about ninety men per local board for physical examination. As these men will not all be inducted immediately, but will be called up during the following three or four months, the average examination load on each board will probably be between twenty and thirty men per month. These calculations are not applicable to each local board because the quota assigned to a local board takes into consideration certain credits to that community accruing from men presently in the regular services or active National Guard. The total appeals on physical grounds during the World War indicate a lesser load on medical advisory boards. The additional number of cases sent up for advice by local examining physicians is not known.

STATE HEADQUARTERS

The state headquarters operating under the governors of the several states are charged with the organization and operation of the selective service system within the respective states under the policies and procedures authorized by the President. For each state the President will designate one or more officers of the Medical Reserve Corps of the army and navy as medical assistants on the staffs of the several governors. They will assist the state authorities in the supervision and coordination of medical examinations throughout the state. They will establish and maintain liaison with all examining physicians and members of medical advisory boards, hold regional meetings for them to promote critical discussion and analysis of the medical problems of selective service, and visit medical advisory boards, local boards, and examin-

ing physicians to advise and assist all concerned with physical examinations. They will keep the necessary records and statistical analyses of the operation of the medical function of selective service within the state.

NATIONAL HEADQUARTERS

The national selective service headquarters in Washington will contain a compact medical division, which will assist the director of selective service in the determination of policy on medical matters and have general direction and coordination of the medical functions through the state headquarters and the medical assistants in each state.

INTANGIBLE BENEFITS OF SELECTIVE SERVICE

The training and service of hundreds of thousands of young men of the nation during the coming years, the improvement in their physical condition resulting from good food, regular hours, supervised physical endeavor and healthful environment, as well as a revival of that feeling of national unity which seems ever to be a part of a great national effort, will not be the only benefits which the nation will derive from selective service. There are certain other dividends which will be worth while. It is expected that the analyses of the reports of physical examinations and other records of selective service will make available many new data of sociological and medical importance. The occurrence of disease and disability as to character, locality, age group, color, and nativity will give us a new measuring stick by which to judge the efficacy of the many and varied health programs that we have carried on in the last twenty years and will assist in the preparation of new plans for the future. These analyses will further disclose the physical fitness of the new generation and provide us with a current and more accurate measure of the available man power of the country against "The Day" we pray may never come.

GASTROINTESTINAL SYMPTOMS OF UROLOGICAL CONDITIONS*

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The importance and frequency of gastrointestinal symptoms as manifestations of urological conditions are becoming more and more recognized. This is evidenced by the growing literature upon the subject. There have been many articles written by the internist, gastroenterologist, the general surgeon, as well as the urologist. On the other hand, the general surgeon, as well as the internist, in discussing the differential diagnosis of abdominal conditions are prone to discuss at length, and emphasize the rarer conditions, while only mentioning or forgetting entirely the common confusing conditions of the genitourinary tract in general. In fact, one internationally recognized general surgeon recently stated that he was proud of the fact that he had never made a diagnosis of a Dietl's crisis and furthermore does not believe such a thing can happen. This does not alter the fact that as high as fifty per cent of renal or ureteral colics are not due to stone. Such statements are unfortunate, not only from the standpoint of the surgeon himself, but no doubt such teachings are partially responsible for the fact that records of any hospital will disclose the constant repetition of error in diagnosis.

Although this audience represents a cross section of our profession, I prefer primarily to keep in mind the family physician and his problems. He is the keyman to whom the patients first bring their complaints, and if he fails to arrive at a correct diagnosis and his efforts at giving relief prove futile, patients often are referred to the wrong specialist, or begin to go from one physician to another in an attempt to find relief. Thus patients may spend weeks, months, and even years in a fruitless effort to regain health, through attempted treatment of gastrointestinal tract conditions, from one to many operations, psychotherapy, rest cures, etc.

The urinary tract ranks first in giving rise to symptoms that are easily mistaken as having their origin in some other organ or system. Bumpus and Thompson, in reviewing 1,001 cases of calculous disease at the Mayo Clinic, discovered that 162 of the patients had previously been diagnosed as having cholecystitis or peptic ulcer. Lowsley reports a series of eighty-four urological patients who had had thirty-nine major surgical operations performed without relief of symptoms. Cecil reports in a large series of cases of urinary tract diseases in which pain was limited to the abdomen alone in twenty-two per cent, and twenty per cent had had some other abdominal operation performed without relief of symptoms. Mertz, in a review of urinary calculi, found twenty-two per cent of his cases had previously had an appendectomy without relief. Beck, in a review of 284 private patients, found fifty-seven per cent with gastrointestinal symptoms and in thirty-three per cent was the chief complaint. Morrissey reports 177 cases of nephroptosis in which digestive tract symptoms were present in thirty-nine. Hartsock of the Cleveland Clinic reports that thirty per cent of patients with lesions of the kidneys and ureters have associated gastrointestinal symptoms and that twenty per cent have had abdominal operations without relief, and sixteen per cent more have had erroneous diagnosis. He also reports that twenty per cent of patients with gastrointestinal complaints, definite causes outside the gastrointestinal tract are responsible. Many other writers have stressed the high incidence of cases with gastrointestinal symptoms with definite urinary tract pathology. Practically any physician, whether general practitioner, surgeon, internist or urologist could cite examples of patients who have had from one to several operations or prolonged medical treatment for years until an investigation of the urinary tract revealed the underlying pathology producing the symptoms.

*Read before the Tennessee State Medical Association, Chattanooga, April 9, 10, 11, 1940.

It is not the intention of the urologist to criticize or boast of his fellow practitioner's mistakes, but so many examples of error in diagnosis comes to his attention that he is duty bound to report his experiences in an attempt to stimulate more urinary tract consciousness.

In order that we may understand the physiological principles of gastrointestinal manifestations of urological conditions, let us review briefly the possible mechanisms:

1. Renodigestive reflex mechanism. It has been definitely established that there is a close interrelationship of the nerve supply of the urinary tract and organs of digestion. The innervation of the kidneys and ureters is derived from the same source as that of the stomach, small intestine, cecum, and transverse colon.

The gastrointestinal system receives its nerve supply from (1) the sympathetic, which is inhibito-motor, (2) parasympathetic (vagus), which is excito-motor. The remainder of the intestinal tract is supplied by the lumbar sympathetic, inhibito-motor; and the excito-motor impulses through the sacral parasympathetic (s2-S4). It has been definitely shown that stimulation of the sympathetic fibers is followed by a decrease in motility. Stimulation of the parasympathetic initially inhibits intestinal and gastric motility, which is followed by an increased motility and hyperstalsis. The effect on the sphincter from stimulation of either is opposite to that on peristalsis. The kidney receives its supply from the renal plexus, the coeliac ganglion contributing most of the fibers, while a few are contributed or supplied by the aortic and adrenal ganglion and the lesser splanchnic nerve. Through the coeliac ganglion the renal plexus communicates with the greater splanchnic nerve. Through the splanchnic nerves it communicates with the fibers from the sixth thoracic to the first lumbar segments. The visceral nerves of the kidneys from the tenth thoracic to the second lumbar segments have a direct reflex connection with these segments. Through somatic branches of these segments, reflex cutaneous hypersthesia occurs, as well as reflexes to the visceral branches supplying the gall

bladder and intestinal tract. Impulses from the perirenal tissue and kidney when reaching the spinal cord may pass upward in the tractus solitarius to the muscles of the vagus, from there through the parasympathetic to the stomach and upper abdomen. Similarly by connection through the spinal cord cells (intermediolateral columns), the sympathetic and parasympathetic fibers to the large bowel may be stimulated, producing a decreased or increased motility.

Therefore the upper urinary tract and the greater portion of the intestinal tract being innervated by fibers from the same source, a stimulus in the upper urinary tract may produce an alteration in the motility of the digestive tract, producing symptoms suggesting disease of this tract.

Algrove contends the gastroduodenal symptoms so frequently accompanying nephroptosis are not entirely reflex, but that the displaced right kidney pulling upon the colonic flexure displaces it downward, which causes traction upon the mesenteric arteries which in turn compresses the duodenum. He considers that pain, vomiting, epigastric distention, duodenal regurgitation, etc., are actually the result of direct mechanical compression of the duodenum.

2. Close anatomic approximation of the kidneys with other abdominal viscera. This is more important and confusing—on the right side, the kidney being closely approximated to the duodenum, gall bladder, pancreas, and ascending colon. The left kidney is closely approximated with the stomach, tail of pancreas, and colon. Both ureters lie closely attached to the peritoneum for nearly two-thirds of their extent.

3. Toxic and metabolic disturbances, in which toxic products are circulating in the blood stream due to products of infection, or retention of toxic material, either from disturbance of metabolism or poor elimination or both. There may be mild or extensive secondary changes occur in the mucosa of the gastrointestinal tract with disturbed function. The details of these are beyond the scope of this paper.

4. Circulatory factor due to stasis in conditions of nephroptosis, being purely a physical process, occurs occasionally. That

any one or any combination of the above factors may be the underlying mechanism, there is no doubt. In general, most urologists are of the opinion that the renodigestive reflex mechanism is most important in most cases that are usually confused. Medical men tend to emphasize the toxic factor as more important, probably because they think most of the nephritides. The nephritides may give gastrointestinal symptoms, simulating acute or chronic gastrointestinal conditions, but other associated blood and urinary findings are present, to easily differentiate the condition, and will not be considered further in this discussion.

Clinically, gastrointestinal manifestations of urinary tract disease may be classified according to the region simulated as: (1) gastroduodenal, (2) biliary, (3) appendicial, (4) colonic.

(1) In the gastroduodenal type the predominating symptoms are usually dyspepsia, heartburn, belching, nausea, vomiting, epigastric pain or distress, which may be such as to simulate a perforated peptic ulcer, high intestinal obstruction, gastritis, peptic ulcer, etc. Often a gastric retention may be present due to atonic, dilated stomach. This group of symptoms is usually due to a disturbance of motility through the renodigestive reflex. In some cases a renal tumor or ptosis of the right kidney, by pushing or pulling on the duodenum, may cause the digestive symptoms.

Kuntz summarizes that "in many cases of gastric disorder the stomach is not at fault, but is made irritable by the reflex effects of the lesion elsewhere. Whenever gastric symptoms are strikingly intermittent in the absence of unmistakable evidence of gastric lesion, then the lesion is situated outside the stomach."

(2) The biliary group. The mechanism of biliary colic due to stone and that of ureteral colic due to sudden obstruction from stone, kinking, etc., is fundamentally the same. By sudden obstruction to the secretion downward, as the secretion continues behind the obstruction, there results a marked hyperstalsis and hydrostatic pressure in an attempt to dislodge the obstruction. Usually the two conditions can be

easily differentiated, but in many an investigation of the urinary tract is necessary. Because of the high degree of diagnostic errors occurring in so-called chronic gall-bladder disease and right renal pathology, many think a urological investigation should be done routinely before such a serious major operation is resorted to, or prolonged medical treatment is justified. Certainly it should be done if operation or medical treatment does not relieve the patient's symptoms, even with normal urinary findings.

(3) Appendicial group. Symptoms simulating appendicitis are apparently the most frequent, as appendectomy is most frequently done without relief of symptoms. As some one recently stated, appendectomy is the most frequent operation done for right ureteral stone. In suspected appendicitis, where the history is not definitely sequential with typical symptoms and physical findings, an investigation of the urinary tract can and should be done with only an hour's delay in the operation, and without jeopardizing the welfare of the patient. Probably most of us have heard a surgeon say "he had rather remove a hundred normal appendices than to allow one to rupture." Of course, when in just doubt, remove the appendix, but with modern, accurate, rapid means of eliminating right renal or ureteral pathology, most anyone will agree that such an attitude of percentages has no place in modern medicine.

As to so-called chronic appendicitis, Stevens insists that such a diagnosis should be looked upon with suspicion and a urological study of the right kidney and ureter should always be made before resorting to an operation. Pain in the lower right quadrant is seldom due to disease of the appendix in the absence of other symptoms of this condition. The differentiation of lower abdominal pain, due to urinary tract disease from that caused by the internal genital organs in the female, is evidenced by the percentage of pelvic operations done without relief of symptoms. Here again, when in doubt, an investigation of the urinary tract would disclose the underlying pathology and save the surgeon frequent embar-

nessment. Pain referred to the lower abdomen in the male patient, due to bladder and lower urinary tract disease, are usually accompanied by local physical findings sufficient to direct the physician's attention immediately, although an early acute or subacute seminal vesiculitis or vasitis or even prostatitis has been the cause of many an appendectomy.

(4) Colonic group. That this group, including various types of colitis, irritable colons, etc., comes in for serious consideration, is evidenced by the frequency with which urinary tract pathology has been found and corrected before relieving the patient's symptoms after the best of medical talent has failed to give the patient relief.

In a short paper of this type, time hardly permits individual consideration of the various urological conditions capable of producing gastrointestinal symptoms, which includes practically all urological conditions, either directly or indirectly. Statistics reveal that ureteral or renal calculi are the most frequently erroneously diagnosed, which could be easily recognized with as simple and cheap a procedure as a plain X-ray if only it were thought of. As has been stated, "we cannot diagnose anything of which we do not think." Hydronephrosis which may be due to any obstruction, including stone, below the pelvis of the kidneys is probably the next most frequent condition erroneously diagnosed. There are some urological lesions which, I believe, are due special mention. From the literature, pathology in the female urethra is a rare condition. This, however, is far from true, for if the physician, especially the general practitioner and gynecologist, would examine the urethra in pelvic examinations routinely, a stricture would be found with surprising frequency. Urologically, one would find a definite stricture usually in the anterior third of the urethra. Within the past year the author has examined seven patients with a diverticulated bladder due to urethral stricture, some of which had had many bladder irrigations with a small catheter and treated for gastrointestinal symptoms extending over a

period of time as long as twelve years. Another group of cases is that of a median bar or bladder neck contracture in the debilitated type of patients usually past fifty years of age. Some of these patients may have predominating gastrointestinal symptoms of the dyspeptic type. Unfortunately, most laymen and many physicians consider a regular nocturia as a natural thing in old age. In most cases this is not true. Any male, regardless of age, but particularly beyond fifty years of age, with a regular nocturia of one time or more, with or without urinary findings, should be suspected of having a bladder neck obstruction. Rectally with a median bar or middle lobe obstruction, the prostate is not enlarged, probably the reason so frequently missed. There may be even considerable elevation of the blood nonprotein nitrogen. Of course, a urethral stricture in a male may give essentially the same clinical picture. This may be secondary to a gonorrheal urethritis occurring in his late teens, but the stricture may not bother the patient until within the prostate age. Another important condition deserving special mention is chronic prostatitis and prostateseminal vesiculitis with the protein manifestations often treated for various intestinal conditions.

Why should gastrointestinal symptoms from urological conditions be so frequently erroneously interpreted, and what can be done to correct this situation?

First, a history, very carefully taken, is extremely important. In many cases a specific, minutely obtained history will reveal intermittent mild bladder symptoms, as a slight frequency, an uncomfortable feeling after voiding, etc. There may be a history of localized pain over the lumbar region at the onset which later is referred to some other part of the abdomen. Often by the time a physician is consulted, the gastrointestinal symptoms may become so marked that the patient may entirely forget earlier symptoms or symptoms yet present referable to the urinary tract, unless questioned specifically. In other words, get a thorough sequential history.

Probably the most frequently confused and misinterpreted simple procedure is that of an ordinary urine examination. Many times the urinary tract is eliminated from consideration if the differential diagnosis by a laboratory report of only a few white blood corpuscle or an occasional red blood corpuscle. This one false idea that such a report means a normal urinary tract probably is responsible for a great many errors. Practically any obstructive lesion occurring anywhere in the urinary tract before a secondary infection develops usually produces no microscopic urinary findings, even with a markedly damaged kidney. Even an acute pyelitis may not produce a pyuria during the first few hours, but a centrifuged stained smear will reveal organisms.

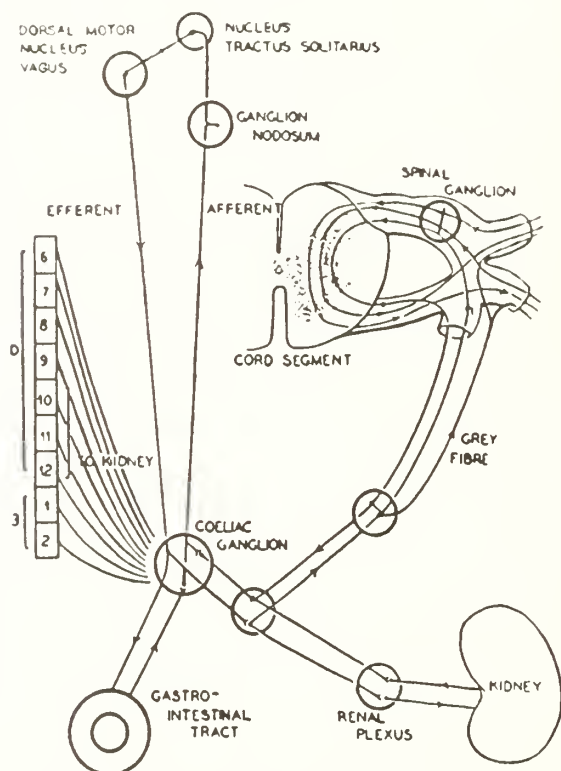
Pyuria means an infection somewhere in the urinary tract. Often there may be no other symptoms or marked physical findings definitely referable to the urinary tract, but gastrointestinal symptoms may be present.

dominal inflammation in close proximity of the kidney, ureter or bladder, including acute appendicitis. On other urinary tests or findings that seem to be confusing to some is the significance of a positive test for albumin. Remember that a good microscopic hematuria and pyuria will give a positive test for albumin. Thus, normal urinary findings does not eliminate disease of the urinary tract, and when present should be an indication for an investigation to fix the source.

In many cases the first clue to a correct diagnosis may be from a plain X-ray of the kidneys, ureters, and bladder. A flat film should be routine and precede a complete roentgen study of the gastrointestinal tract. It is of special value in the detection of opaque stones in the kidneys and ureters and in revealing the size, shape, and location of the kidneys. But do not forget that a negative film for stones does not rule out approximately ten per cent of ureteral stones, and that approximately fifty per cent of so-called kidney colics are not due to calculi.

Intravenous urography should be used more frequently, even though it has many disappointing features, and, in general, has not proven to be of the original expected value. This is borne out by the fact that the percentage of diagnostic errors since its advent has changed very little. Some think this is partially due to inability in general to recognize and interpret correctly the pathology present. This does not detract from the fact that it is still a very valuable procedure in certain groups of cases.

Modern cystoscopy and retrograde pyelography certainly is deserving of a few favorable comments. There seems to be prevailing feeling among most physicians that cystoscopy is an extremely tortuous and dangerous procedure with little information to be gained, and are hesitant in allowing their patients to be subjected to such a procedure. This unjustified sentimental feeling no doubt plays an important part in the high percentage of diagnostic errors. On the contrary, with the improved, efficient equipment, a mild sedative, local



Microscopic or even gross hematuria may be a part of any pathologic process of the genitourinary system, but it may also occur with or without pyuria with any acute ab-

anesthesia, with experienced skill and gentleness, a complete retrograde investigation with accuracy unsurpassed by any other diagnostic procedure can be carried out in an hour's time and without jeopardizing the welfare of the patient, even if a major abdominal operation must follow immediately.

SUMMARY

Attention has again been called to the frequency of error in diagnosis of lesions of the urinary tract. The mechanism of the production of gastrointestinal symptoms by diseases of the urinary tract has been shown, the renodigestive reflex mechanism being probably the most important. The toxic or metabolic factor being primarily a circulatory process is most important in the nephritic and retention or preuremic groups. The close proximity of other abdominal viscera and the kidneys, and occasionally the mechanical process of circulatory stasis, are also being recognized as important in some cases. It has been pointed out that symptoms of urological conditions may stimulate practically any acute or chronic abdominal condition that occurs. Some of the difficulties in diagnosing these conditions have been emphasized. The importance of a carefully elicited sequential history, the fallacy of a normal urine eliminating the possibility of urinary tract disease has been stressed. The value of a plain X-ray of the urinary tract and reasons why it should be made before a study of the gastrointestinal tract in many cases has been shown. Its very definite limitations as a diagnostic aid for conditions other than calculi was pointed out. Intravenous urography may be of great value, but has many disappointing features. The benignity, rapidity, safety, and value with which a retrograde study of the urinary tract can be done in questionable cases of abdominal conditions has been stressed.

In general, where a definite diagnosis of an abdominal condition cannot be established, the urinary tract must be given serious consideration, and when operation or prolonged medical treatment has failed to relieve the patient's symptoms, a uro-

logical investigation should be done, regardless of whether the urine shows any abnormal findings.

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DISCUSSION

DR. THOMAS D. MOORE (Memphis): In the excellent paper which Doctor Barnwell has just presented, it is evident that he has carefully reviewed the literature, and has produced indisputable evidence of the confusion existing in the diagnosis of lesions involving the gastrointestinal tract with those originating in the urinary tract. There is no denying that misdirected treatment will continue to be practiced unless this confusion is kept in mind and every effort made to arrive at an accurate diagnosis before treatment, whether medical or surgical, is instituted. In consideration of the close interrelationship between the nerve supply of the urinary tract and that of the gastrointestinal canal, as pointed out by Doctor Barnwell, it is not difficult to understand the underlying reasons for these diagnostic problems. Some years ago in the analysis of a large group of cases of hydronephrosis, Braasch pointed out that in approximately fifteen per cent the pain was referred to the upper abdominal quadrant on the affected side. When the right kidney was involved the symptoms closely simulated those of gall-bladder disease. When it is recalled that in a sterile hydronephrosis the urinalysis is negative and the plain film of the urinary tract is also negative, these become misleading evidence; and unless a cystoscopic investigation is carried out the condition likely will be overlooked. Most of such errors of diagnosis may be attributed to a disinclination to investigate the case fully. A safe rule would be to have the urinary tract definitely excluded by a careful examination rather than

going ahead with surgical treatment under the tentative diagnosis of an abdominal lesion. In emergency cases where the symptoms might be due to either acute appendicitis or a ureteral calculus, only a few moments are required to investigate the urinary tract and the careful surgeon will have this done. Needless to say that the removal of an appendix will not aid the patient who is suffering from a ureteral calculus, nor will the removal of a gall bladder be of benefit to a patient who is suffering from a right hydronephrosis.

One of the best evidences of gastrointestinal symptoms arising from a lesion involving the urinary tract is the very common complication of tympanites in cases which have been subjected to surgical treatment of the kidney or ureter. It is not uncommon for a few days to experience great difficulty in controlling abdominal distention in these cases.

From the standpoint of symptoms, perhaps one of the most valuable clues is the sudden onset of pain when the kidney or ureter is involved with an obstructive lesion, and of physical findings, perhaps the one of most value is the acute pain suffered on heavy percussion of the renal area on the side affected.

To illustrate how confusing these conditions may be, the following case is cited: A young married woman, aged twenty-eight, was admitted to the hospital because of pain in the right loin which had its onset about ten days before. The onset was gradual; it was originally in the epigastrium and later localized in the right lower quadrant. Soon afterwards it was felt posteriorly in the loin and was associated with frequency of urination and some burning. She had had moderate fever which had persisted. On examination there was an indefinite, palpable, tender mass in the right lower quadrant and moderate tenderness on palpation in the right loin. Heavy percussion posteriorly over the renal area elicited definite pain; a plain film of the urinary tract was reported negative, but the urine contained pus graded II and a few red blood cells. She was referred for cystoscopic examination; the function of the right kidney was found definitely impaired; there was pus graded II from the right kidney; and a right pyelogram disclosed hydronephrosis of a first degree which also involved the upper two-thirds of the ureter. A diagnosis was made of early right hydronephrosis and hydro-ureter with inflammatory obstruction of the ureter. Because of the onset of pain being in the epigas-

trium with localization in the right lower quadrant, and with a palpable mass in that region, a diagnosis also was made of acute appendicitis complicated with an appendiceal abscess. Upon exploration an appendiceal abscess was found which was drained and the patient made an uneventful convalescence. The pyelogram was repeated six weeks later which is illustrated by Slide 1. This reveals the hydronephrosis originally found and a perfectly normal postoperative pyelogram; in other words, this patient had acute appendicitis with a complicating appendiceal abscess, with involvement of the ureter in the inflammatory reaction causing partial obstruction. She had both an early infected hydronephrosis and acute appendicitis with an abscess, but drainage of the appendiceal abscess relieved the entire condition.

Renal colic may be due to an impacted stone which may be very small or possibly ray permeable. Because of the associated tympanites, intestinal obstruction may be strongly suspected. In several such instances, removal of the ureteral stone has completely relieved the condition.

Another source of confusion is tumors in the lower abdomen in which a distended bladder must be excluded. We have seen several patients who were subjected to an abdominal exploration when a distended bladder was found due to *tabes dorsalis*. In such cases the bladder may be easily excluded by simple catheterization. Only recently I was called in consultation to a neighboring city when this simple test had not been made and the passage of a catheter caused the complete disappearance of a tumor which had been suspected of being an abscess.

Another source of confusion is bladder symptoms which have been ascribed to the pressure of an enlarged uterus. Such a diagnosis is hardly warranted until the bladder has been inspected cystoscopically. Not long ago a patient was told that the pressure of a fibroid tumor of the uterus was causing her bladder symptoms, but when she was seen in consultation by a general surgeon he suggested that the bladder be inspected. When this was done, a carcinoma of the bladder was seen which subsequently proved to have its origin in the colon and invading the bladder.

Doctor Barnwell is to be congratulated on the excellent presentation of his subject, which has given food for thought to urologists, internists, and surgeons alike.

SOME OBSERVATIONS ON THE STATE PROGRAM FOR THE RELIEF OF CRIPPLED CHILDREN*

R. W. BILLINGTON, M.D., Nashville

When I was asked by our secretary, Doctor Shoulders, representing the Program Committee, to discuss this subject here, it was with considerable reluctance that I consented to do so. I fully realized that any criticism of plans or efforts directed toward the relief of such an appealing group of unfortunate children is very likely to be misconstrued or condemned, and I wish it clearly understood that I am thoroughly in sympathy with the purpose of all who are sincerely and primarily interested in helping crippled children, even if I do not agree with all of the methods now being employed. As proof of such sympathy, I have for the last thirty years devoted most of my time and efforts toward improving the lot of these cripples, a large proportion of my services to them being rendered as pure charity.

It was pioneer work in those early years, and, as usual, the path of progress was a bit rough, and recognition of the great value of this type of surgery was slow. But gradually the beneficial results of orthopedic work were recognized by both the medical profession and the public, causing other young physicians to enter this specialty and various groups of laymen to offer their assistance in this work. Needless to say, had it not been for the initiative and the hard-earned progress of our early orthopedic surgeons, there would today be no Crippled Children's Service or other welfare groups organized for the purpose of helping to make our professional services available to these patients. To illustrate this growth of public interest and for the benefit of those who are not familiar with the details of operation of the Tennessee State Crippled Children's Service, I shall outline briefly its history and present setup.

The first legislation in behalf of crippled children in Tennessee was a bill passed and signed by Governor Austin Peay on April

16, 1925. This Act was sponsored by the Tennessee Society for Crippled Children which was formed by a group of Rotarians in 1923. It provided for its administration by the Department of Institutions, Health, and Education, but little was done in a practical way by the state because of lack of funds. So, a new bill was passed in 1929 providing for appropriation of funds for support of a state program. Authority for administration was so divided and funds were so limited that little was accomplished, and it was further curtailed by the legislature of 1933.

In 1935, an amendment to the Act of 1929 was passed, creating a State Commission for Crippled Children's Service, composed of seven members, three orthopedic surgeons, and four laymen. Governor McAlister appointed Mr. Graham Hall chairman. I happen to have been named one of the commissioners then and have held such appointment to the present time. This commission took over active administration of the service, and a sum was appropriated by the state, which was to match funds to be appropriated from each county to assist in caring for its own children. These joint state and county funds were eligible for matching federal government funds made available under the Social Security Act of 1935.

Two years later the administration of the service was taken over by the Department of Health, since which time the commission has acted only in an advisory capacity on two or three occasions. After more money (state and federal) became available in 1935, the number of patients being handled by the service increased, and a survey of the state by the American Legion and the C. W. A. in 1935 showed about 7,000 crippled children under twenty-one years of age who were unable to pay for treatment and who had not been treated (though this estimate was probably too large).

*Read before the Tennessee State Medical Association, Chattanooga, April 9, 10, 11, 1940.

In view of this large undertaking, the question of some compensation for the surgeons who were to do this work was considered by the commission. None of us had ever received any pay for our professional services to these state cases, and it seemed to most of us that if the state and federal governments were going to take over the care of nearly all of these patients and tell the public that all were entitled to it free unless they had plenty of spare money to pay a private physician, then some of the money to be spent should go for the surgical and medical care. For, after all, this was the all-important part of the program; in fact, the only part that required any extraordinary knowledge or skill to carry out.

I was one of a committee appointed to investigate the plans of other states in regard to this question and to make recommendations to the commission. We found that a few states had special hospitals and salaried surgeons to do this work, while others paid practicing orthopedic surgeons small fees for each case, these being handled much the same as private patients in private or semiprivate hospitals. We recommended this latter plan and presented a fee schedule for the different types of cases (about twenty-five per cent of ordinary fees) and this was approved by the commission. The chairman and two or three others insisted that this could not go into effect until more funds were available. So nothing was done about it, until after Doctor Williams and his Health Department took control. After considerable discussion, he offered as a temporary arrangement a small honorarium of fifty dollars a month to each of the surgical staff to help bear some of our overhead expenses, not as compensation for professional services. This went into effect about two years ago and has continued up to now.

At present the administrative personnel of the service consists of (besides Doctor Williams and the seven commissioners) a medical director, administrative assistant, medical social worker, bookkeeper, secretary, two orthopedic nurses, and three clerks, one for each of the regional offices

in Nashville, Knoxville, and Memphis. It is planned by July 1, 1940, to add at least two new nurses. Those counties having full-time health units include Crippled Children's Service as part of their regular health program. Plans have been made and steps taken toward establishing outpatient clinics in each of the four largest cities in the state. These will no doubt each require other paid assistants.

According to Doctor Williams, future plans for the service include:

1. A greater number of crippled children to be treated.
2. Treatment of the child as a whole rather than solely for the crippling condition.
3. Increased county appropriations for participation in the program.
4. Special education program organized at the four hospital centers.
5. Better understanding and closer cooperation between Crippled Children's Service, vocational rehabilitation, Department of Welfare, and other state agencies.

The service has contracts, at reduced rates, with hospitals in the four largest cities to take care of hospital cases treated by the orthopedic and plastic surgeons designated by the service. Convalescent homes in at least three of these cities care for many of the patients requiring such care without any pay from the state. Each case is under the care of the surgeon, to whom it is referred in the beginning by a system of rotation. Those cases not in hospital or clinics are seen from time to time and given outpatient care at our offices. This often includes dressings, plaster casts, application of appliances, etc. Reports of examinations, operations, and progress and getting authority for shoes and braces require much of the surgeon's time as well as that of his private secretary.

At my request, Doctor Williams has recently furnished me with a report of expenditures of the Crippled Children's Service for the year 1939 as follows:

For hospitalization, boarding homes, and appliances -----	\$ 76,760.79
For administration (salaries and travel expenses) -----	18,446.12

For orthopedic and plastic surgeons' "fees" -----	11,060.00
Total expenditures -----	\$106,266.91

You will notice that the amount paid to orthopedic and plastic surgeons was approximately ten per cent of total expenses. The word "fees" is used here in place of the proper term "honoraria," as the amount paid to each surgeon (\$50.00 each month) hardly covers a fair proportion of our overhead expenses and amounts to nothing for professional services. No doubt much good is being accomplished under this arrangement, but are the other elements ten times as important as the professional services, which constitute the heart of the whole business and are the only part which require any special knowledge or ability to perform? Moreover, we have treated thousands of crippled children, a large proportion of them indigent, too, before the federal and local governments had any part in it at all.

If all of this complicated and expensive setup, with its maze of red tape and records, is necessary for the proper treatment of crippled children, then most of our patients, in the past, both pay and charity, have been deceived and cheated. As a matter of fact, public charity is being made to appear so imposing and attractive that our private pay patients are often led to think they are missing something. Moreover, as with other government handouts, everyone thinks he is entitled to his share of it without thanks or obligation to anybody. Service cases and their families and friends will not believe that the surgeon is not being paid well for his services, and they do not feel the same gratitude and obligation to him as do other charity patients.

Gentlemen, we orthopedic surgeons already have state medicine, so far as crippled children's work is concerned, and without compensation, which is thus doubly pernicious and destructive to us and to the future of our profession.

Well, now that we have gone thus far and the public trend is toward more and more government paternalism, and even socialism, what can we do about it? I am

sure that none of us wish to deny these cripples the opportunity of getting efficient medical care, and all of us have shown our willingness to aid to the point of real sacrifice. But we must face this problem squarely and realize that any plan, to be successful, must be practical and fair to all concerned. Like much of the other so-called social security, we are borrowing resources from the past (in medical training and knowledge) and from the future (in increased debts) for temporary benefits which *cannot* be lasting. It must be realized that medical and surgical knowledge and skill are the foundation stones of any crippled children's or other medical program, and that these must be conserved above all else if the structure is to endure. In such matters there is always a tendency to overdo organization, administration, and so-called social service, at the expense of the more essential and indispensable medical services. This policy results in efforts to get as many children or "cases" as possible enlisted as wards of the state. I have had many of my private patients tell me they were advised by health nurses and case workers to apply for free care by the state, and some of them have done so and been accepted by the Crippled Children's Service, even though I advised against this and was willing to finish their treatment with charges, if any, according to their ability to pay.

In a recent correspondence with the secretary of the Tennessee Society for Crippled Children I said:

"As you probably know, we orthopedic surgeons are giving large amounts of time and professional services to crippled children without any material remuneration and at considerable expense to ourselves. We have always given freely of our services to poor, crippled children, but the proportion of such work which is now entirely charity has so increased that it has become a heavy burden upon us.

"Some of us have realized for quite a while that the various welfare agencies who are active in behalf of crippled children and whose existence and success are primarily dependent upon the services which we render have seemed to overlook this fact. We

feel that many of the cases we are asked to treat should not be entirely charity and that the very existence of our specialty of orthopedic surgery is being threatened.

"Unless some change is made in the near future, there will soon be a scarcity of orthopedic surgeons who are able or willing to carry on as at present without due compensation. In fact, there is now no material incentive for a young physician to prepare himself for the very specialized field of crippled children's surgery, since most of this type of work has now been popularized as a public charity. The present plan will of necessity result in the government or other public agency having to educate and pay men to go into this line of surgery or else this program must fail because you will have destroyed the one chief essential of such a program. I think this matter should receive serious consideration at your meeting. I have already brought this vital question to the attention of our State Crippled Children's Commission."

It seemed to me that it was not out of order to remind these political and social welfare groups that they are entirely a result of and that their activities are secondary to our surgical work, which is the fundamental and essential element in the treatment of these children. In this respect there are now too many who fail to "keep first things first," or who insist on having "the tail wag the dog." In fact, so many uplifters and organizers have attached themselves to this canine's tail or climbed upon his back that he is rapidly becoming exhausted both because of this load and because of the fact that no one seems to think the poor dog ever needs to be fed.

I believe that as far as possible these children should be left in their homes with their families while undergoing treatment which is often over long periods. Most of them can be treated in much the same way as private patients, provided hospitalization and appliances are furnished when needed, with no one to aid, or interfere, except the doctor and the parents. For some of the patients care in a convalescent home is needed, such as the Junior League

Home in Nashville and others of its kind. These have been supported by private efforts and donations, not by the state. Existing hospitals should be used, as at present, with special rates for these cases. There should be a more strict observance of rules with regard to admitting only indigent cases to the service. Commitment by a county judge is not a guarantee that a patient or family is properly entitled to public charity.

A low fee schedule for payment of physicians, such as now paid by the government for services to WPA workers and other wards and employees, seems to me the fairest plan I know and the least liable to jeopardize the efficiency and independence of physicians doing this work.

Vocational rehabilitation sounds fine in theory, but those of us who saw the effort to apply it to disabled soldiers after the World War know that it proved most disappointing and expensive, and often demoralizing to the patient.

It has seemed to me all along a dangerous policy for the federal government to contribute to charity, always with strings tied to its gift so that all who accept these gifts (grants-in-aid) must be controlled by policies made in Washington. It is certain to be wasteful and arbitrary. Like other charity and relief, I believe the states and local communities should handle such problems themselves except in unusual emergencies such as formerly required and obtained assistance from the Red Cross. Just recently it was reported that Surgeon General Thomas Parron unwittingly suggested that proposed grants-in-aid should be withheld from states whose health department appointments fail to meet with Washington's approval. We all know that this would be a perfect politicians' plan for distributing patronage and would apply just as well in controlling other policies.

Well, it seems that the popular idea, that, by bureaus and loans and gifts, the government can cure all the ills that flesh is heir to, must go on to its inevitably tragic fate. Let me call the attention of all who still believe in this theory to a piece of advice—

in fact, a command, given by Moses to his people in Ex. 23: 8 as follows:

"And thou shalt take no gift: for the gift blindeth the wise, and perverteth the words of the righteous."

DISCUSSION

DR. ROBERT T. PATTERSON (Knoxville): Mr. Chairman and Gentlemen: I enjoyed very much Doctor Billington's paper, and although I have not been in the game as long as he has, having been in it nineteen years, I have been in it long enough to observe the course of events as regards the care of crippled children in East Tennessee. I am the pioneer orthopedic surgeon of East Tennessee, having been the only one for a number of years. Therefore, I think that I have a fairly good bird's-eye view of the subject.

When I began my work up there, I was appalled at the great number of cripples there were not only in my immediate community, but throughout the mountains where we were. I saw that a tremendous problem was before me and whoever else came into our territory. When the crippled children law was passed, I welcomed the law, but when I read it and found that there was no provision made for compensation of the doctors who did the work, I felt that would probably be only a temporary arrangement. Knowing the volume of work that was inevitably in view, I could not see how the orthopedic men could carry it all and still make a living. When I began my practice, I made my living off of crippled children. In fact, "orthopedic" comes from the Greek meaning straight child, and orthopedic surgery primarily is the treatment of crippled children. I have lived to see practically all of the crippled children leave private practice and become charity cases. I will not attempt to say why that is. Perhaps it is due to the economic conditions. I do not know. Perhaps it is due to the fact that most of them are unable to pay for the length of hospitalization necessary for handling their cases. Be that as it may, that is what has occurred, and we are making our living largely off of traumatic surgery, fractures, consultations, testimony in court, office examinations, often in competition with the general surgeons. Now they have been very nice about it, and a lot of them turn a good deal of work over to us, and we are not starving to death by any means, be it understood, but on the other hand we do have the crippled children problem, and as far as I am concerned, I do crippled children's work for the pure delight and fascinating joy of the thing. Of course, a large element of human sympathy enters into the picture, and I started out to do that kind of a job. Whether or not it will pay my son to come in my footsteps I do not know at this time.

Gentlemen, when this law was passed, I was one of those who met at Nashville with the other

orthopedic surgeons at the request, I believe, of Doctor Bishop, to discuss this problem. I was one of those who stated at that time that I feared the problem would be so large that some provision would have to be made in accordance with the ethical standards of our profession, staying away from state medicine, which I abhor, to compensate us at least for the losses sustained in doing this work, and as we had been trained for orthopedic surgery, I felt that we should be paid something for it, and I still feel that way, as it has become a public health program. Whether it can be worked out as a state problem or not, it should be worked out some way according to ethical standards.

I stated at that time, and we all agreed, that we would carry on for two years until the law could be well under way. There were those who were just as conscientious as I was in thinking that we should continue it as purely a charity work.

To give you some idea of how it has worked out in my section, in Knoxville a small group of us promoted and built with government and county aid—that is, they furnished the money—a small crippled children's hospital known as the Knoxville Crippled Children's Hospital. We did that three years ago. In my country when they bring the child, they often bring the whole family with it, and I was especially anxious to get this large group of people out of my office, and frankly, that had something to do with my trying to work on this hospital business. Since its opening not quite three years ago, 284 children have passed through the hospital. Some of those are readmissions. We have seen in the outpatient clinic, which meets once a week, children from all over East Tennessee that come within our sphere; we have examined and re-examined and made 2,115 contacts just through that hospital alone and the clinic, and that does not embrace all the work. The children over fourteen years of age are treated in Fort Sanders, St. Mary's, and the Knoxville General Hospital. That will give you some idea of the volume of work.

We do it with joy. We expect to continue to do it. I have no idea of striking against anything. I will probably continue to do crippled children's work as long as I live, whether I ever get anything for it or not, but if some way can be worked out to partially compensate the surgeons, I think it would be of great advantage not only to the doctors, but to the Crippled Children's Service as well.

DR. W. C. CAMPBELL (Memphis): Mr. Chairman and Members of the Tennessee State Society: I suppose I am the pioneer orthopedic surgeon in the state. I antedate these gentlemen by some years, and I have watched the evolution of this profession.

DR. BILLINGTON: What year did you start?

DR. CAMPBELL: I started in 1910.

DR. BILLINGTON: I started in 1911. I am one year after you.

DR. CAMPBELL: I do not think that makes much difference. The care of the crippled child by the state has been a start in the direction of socialized medicine. I believe the fee system for paying orthopedic surgeons by the state started in Ohio. At that time I discussed the matter in their national societies and felt that it was a step toward socialized medicine. As a matter of fact, that is just what has become of the old-line orthopedic surgical work. Orthopedic surgery began to advance in other directions along the lines of operative and traumatic surgery. The training which orthopedic surgeons had obtained along mechanical lines was a definite benefit to them in doing operative surgery on bones and joints. Before the advent of aseptic surgery, the orthopedic surgeon's work was primarily limited to bloodless surgery and the application of apparatus which, of necessity, confined his work to the growing child. As it especially developed, more and more operative work was undertaken, with the result that a greater proportion of the work was applicable to the treatment of crippled adults. The corresponding children's services have practically taken over the work which was formerly done by the old-line orthopedic surgeons.

At the present time I have an institution containing about sixty private beds. Of that number, I cannot say that there is a single child in the institution, not one, at this time. That illustrates how the nature of the work has changed. Doctor Billington has brought out this fact.

In my opinion, the crippled child should be taken care of entirely by private charity, but since this is not the case, I have always been willing, as Doctor Patterson says, to do my part for the crippled child. I have repeatedly proved this point in the care of indigent patients in the hospitals of Memphis. I believe that with proper management the indigent crippled could have been taken care of through private charity with practically no cost to the state. Doctor Billington has showed you that ten per cent of the expenditure in this state for crippled children goes to the doctor. I know that in one state the fees have amounted to a considerable sum of money, to the extent that one orthopedic surgeon personally received \$18,000 from the state in one year for services to crippled children. There has been considerable discussion of the situation in that state, and this incident was even brought out in the newspapers. This has caused friction between politicians and the medical profession. As a result, in some instances, politicians have placed crippled children under the care of unqualified men. In another state, a man told me he had received \$12,000 from the state in one year. I am personally opposed to any one surgeon receiving such exorbitant sums from the state. If we went on a fee schedule, we would make a great deal

more money than we are now. I think we are on a salary system of fifty dollars a month.

DR. BILLINGTON: An honorarium?

DR. CAMPBELL: Call it what you want. Everybody is glad to get the fifty dollars because that is all we get, if we take that. I feel that the physician, and not laymen, should determine which patients are eligible for care as charity patients. There is no doubt that a considerable number of orthopedic patients who are not eligible for charity for ordinary medical care may be compelled to accept charity for orthopedic work due to the longer periods of hospitalization required, apparatus, etc. It has been true in every country in the world where socialized medicine has been started that an enormous percentage is paid to the social workers and very little to the doctors, and the doctors have nothing to say as to how it is conducted.

I think the work in the State of Tennessee is carried on splendidly. I have investigated many of the others through national associations, and I think we have the best setup anywhere, but I do believe that doctors should have something to do with the social service department of the treatment of the crippled child and the determination of which patients are eligible to be treated in free beds. If this is not done, the state may gradually usurp the care of patients requiring other types of medical attention, which, in the end, would lead to state medicine.

DR. R. W. BILLINGTON (closing): I expected to have some disagreement or some criticism about bringing up this subject. As Doctor Campbell and Doctor Patterson have said, we men have been in this work for a number of years. If we had been working simply for the money we got out of it, we would have given up crippled children's work a long time ago. That is not the idea at all. Control has been taken out of our hands, where it should have been left; the government has taken it over and is using it as a sort of charity to further the growth and development of socialized medicine. As I said, we are going to come to an impasse on it sometime soon.

I am almost as old as Doctor Campbell, and what happens so far as remuneration in this work is concerned is not going to make much difference to us. That is not what we are after, but we have got to get onto some system that will make it possible for men to go on doing this work. We have got to make it stimulating to those men to develop themselves so as to render the very best possible service to this class of surgical patients, and not have just a few government-employed doctors on a salary of two or three or four hundred dollars a month, perhaps, to exist and get by on. You all know that that sort of regimentation of medical

men is not going to result in the healthy growth of the science of medicine and surgery; it just cannot possibly do it.

How are we going to stop it? I do not know, I am frank to say. I say what I think ought to be done, but I do not know how we can change the trend. The public is demanding the stuff. I am open to other suggestions as to what practical

changes could possibly be brought about, but certainly no change in this direction is going to take place unless the men who are doing the important part of the work speak up and say what they think about it and tell the public, tell the government, in which direction their policy is leading. That is the reason I brought this paper to your attention today.

THE ETIOLOGY AND TREATMENT OF ECZEMA IN CHILDREN*

WM. R. GRAVES, B.S., M.D., F.A.A.P., Memphis

The word eczema means to boil over. It was originally used to designate those forms of acute or chronic inflammatory diseases of the skin whose etiology was unknown. Sutton states that eczema is a sort of dermatological scrap heap, out of which, from time to time, certain diseases that present a characteristic and definite symptomatology are extracted.

Infantile eczema is made up of several different skin conditions. "If there is a severe itching, if there are vesications and oozing with distribution of the vesicles and papular vesicles on the face and on the outside of the lower legs giving rise to punctate appearance, the chances are the eruption is atopic dermatitis."

The word atopic was first suggested by Dr. Arthur Coca to name a condition where there is a predisposition, often by heredity, to sensitization to foreign protein, and manifested ordinarily by hay fever, asthma, or eczema.

"If there is not much itching, if there is profuse greasy scaling on the scalp, if there are circumscribed scaly dry lesions on the body with a tendency to intertrigo in the folds, one may be dealing with seborrheic dermatitis."

If the lesions have sharp margins and are a yellowish pink color, without much eruption, and sometimes with no eruptions, on the face or scalp, one should think of fungus infection.

If the eruption has come suddenly in an older child who has no history of eczema in infancy, it may be contact dermatitis, which is due to primary sensitization by actual or external agents, with the primary lesion in the epidermis.

Atopic dermatitis constitutes seventy-five per cent of eczema and is the form that we shall discuss in this paper. It is due to primary sensitization by hematogenous or internal agents, with the primary lesion in upper corium or the papillary layer. It

is an inflammatory disease of the skin or lichenification, appearing particularly upon the flexures, in a patient of atopic type. The majority of cases start between the second and sixth month with first eruption on the cheeks.

Contact dermatitis is allergic, but there is no hereditary influence operative, no antibodies are formed, the offending substances are not proteins, and there is no association with hay fever or asthma. It is a normal phenomenon for almost any individual to develop antibodies of the ordinary precipitin variety, and a positive intracutaneous skin test, if foreign protein, with which he has not come in contact previously, enters the blood stream. The degree of sensitivity is not high, the antibody formation persists for only a relatively short time, and no symptoms are produced. The atopic individual, on the other hand, as he comes in natural contact with various new foreign proteins from time to time, either in his diet or environment, may react in a somewhat different manner. Most important of all, he has symptoms. His degree of skin sensitivity is likely to be greater and his antibodies, call reagins, possess the power, when injected into the skin of a normal person, of causing a localized specific sensitivity to the corresponding antigen.

When the normal baby first takes cow's milk, there is often a passage of unsplit protein through the intestinal mucosa to the blood stream and precipitins, and a positive intradermal test may develop. This is transient only. This phase of sensitivity is considered a stage in the formation of immunity. In the normal course of events there is no further antibody formation, no further specific skin sensitivity, and a permanent immunity develops.

In the atopic individual, however, the normal development does not take place. Antibodies continue to form, sensitivity persists, and often dermatitis develops. In some individuals this may last only a few months, only a few sensitivities may de-

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velop, and the immunological activities are turned into right channels and the eczema disappears. In others, the perverted immunology may last for years, eczema may change into urticaria, asthma, or hay fever.

The atopic infant first has sensitization to egg white, which, it is thought, takes place in the utero. This is not of etiological importance except as an index of atopy. If a baby is negative to scratch tests of milk, wheat, house dust, and feathers, and its blood shows no increase in the eosinophiles, the eczema is nonatopic.

In seeking evidence to determine the cause of the dermatitis the following questions answered by the mother might prove helpful?

1. Is there a family history of allergy?
2. How old was the child when eruption started?
3. Has it ever been noticed that any particular food caused itching or made eruptions worse?
4. What part of the body was first involved?
5. In a breast-fed baby, what are the mother's dietary habits?
6. How severe is the itching?
7. What kind of mattress and pillow do you have on baby's bed?
8. What exposure to cats or dog?
9. Have you tried leaving off any food and with what results?
10. At what time of the year is it worse?
11. What results have you had with local applications?

In arriving at the diagnosis as to cause or causes of eczema we use allergy tests. Vaughan prefers the scratch tests, but says, if you wish to get as accurate results as with intradermal tests, the material should be 100 times as strong. He believes that at times you should also use the intracutaneous method. Hill prefers to use both scratch and intradermal tests, and from my personal experience I agree with him. Doctor Kesten says you can do very well without either. All agree that we should use only scratch test for egg white, cottonseed oil, cod-liver oil, fish oils, and flaxseed. Ratner suggests that when other tests have failed try a scratch test as follows: drop a

sample of suspected cause in a one-twentieth sodium hydroxide solution overnight, then make a scratch test with the supernatant fluid. The younger the baby, the less reaction you will have. You should never make an intradermal test when you have previously had a positive scratch test. Hill prefers to use intradermal tests on proteins that were negative by scratch tests, especially milk, wheat, and feathers. In making intradermal tests you should never use over two-hundredths cubic centimeters of solution and you should never test for over one of a related group of foods at the same time, for fear of accumulative reaction. A positive skin test indicates by no means a certain, but only a possible, etiological factor. The patch test in atopic dermatitis is not very satisfactory. When food and environmental changes fail to help a child completely covered by eczema, you may use the passive transfer method with fair results. Never test for foods before they have been started, unless it is on a breast-fed infant, when you must consider the mother's diet.

In handling cases of atopic dermatitis it is well to tell the mother:

1. It may take two to twelve months to get results, and unless you give complete cooperation, results will probably be unsatisfactory.
2. The condition is not contagious or infectious.
3. The baby is healthy.
4. There is practically no danger of blood poison or scars in spite of the scratching.
5. The baby will get well.
6. The disease is a maladjustment of the baby's skin to the food and environment.

THE FOOD FACTOR

In infants under one year of age, food is to the environment twenty to one, in older children two and one-half to one. The following foods cause trouble in the order in which they are given: egg white, milk, wheat, oats, barley, beef, chocolate, potato, haddock, tomatoes, rice, corn, spinach, peas, carrots, orange, lamb, codfish, and chicken.

Milk is probably the most common food that causes eczema. Hill states that the intradermal test to milk is very important and several times as accurate as the scratch test. Milk is not a simple food, for in breast milk you must consider all the food that the mother eats, and in cow's milk the food that the cow eats. The four proteins of milk are casein, lacta albumin, lacto globulin, and polisin. From a practical standpoint we consider only casein and lacta albumin. Hill found, in 153 cases, seventeen per cent positive to both proteins, sixteen per cent positive to casein, and twenty-five per cent positive to lacta albumin.

GENERAL TREATMENT

There are three methods of feeding milk-sensitive infants:

1. Evaporated milk, which is heated to 240.8 degrees Fahrenheit for twenty minutes or fresh milk boiled for several hours.

2. Goat's milk, evaporated or fresh, which is treated in the same manner as the cow's milk.

3. Synthetic milk-free foods.

Most of us have tried evaporated milk, and very often obtained good results. This took place when the baby was slightly allergic to lacta albumin and the coagulation, or chemical change due to cooking, made it agree with the baby, and the eczema disappeared. In other cases, when evaporated milk failed to agree, and a change was made to evaporated goat's milk, and good results were obtained, it was because the lacta albumin of the two milks are different. When the offending protein is casein, cooking does not seem to help, and since casein is the same in cow's milk and goat's milk, there is no benefit in changing the milk. In this case, we must use synthetic milk-free foods. The preparations we may choose from are sobee, mull-soy, and cemas. The soybean milk will often clear up eczema, but it has a tendency to cause loose stools and excoriation of the buttocks. When the food appears to be too laxative, you may use weak tea to dilute sobee, instead of water, with very favorable results.

When orange juice gives sensitivity, you may eliminate this by squeezing out the

orange juice and filtering it, the offending protein being in the pulp, or easier, you may use vitamin C tablets. Wheat is the most frequently eaten cereal, and among cereals, gives most frequent reaction. Here, too, the role of common antigen is found. A patient sensitive to wheat is often sensitive to rye and barley. In these cases you most often use corn meal, macaroni, spaghetti, and oats. Sugars, unless they contain wheat, rarely affect atopic dermatitis. Fats are only involved in seborrheic dermatitis. When cod-liver oil is the offender, you may use percomorph liver oil and viosterol.

Rowe recommends the following diet in the second half of the first year: evaporated milk, goat's milk or sobee; corn meal or oatmeal; carrots or string beans; bananas; cevitamic acid; and cod-liver oil. For older children he suggests the following diet for trial: rice, maple syrup, rye-krisp wafers, lamb, carrots, string beans, stewed pears or peaches, bananas, lemon or lime gelatin. If the eczema improves on this trial diet, then you may start new foods, every few days, one at a time, until you find the offender.

Histaminase, an enzyme, inactivating and destroying histamine, was discovered in 1929 by Best. Histamine, excess in body tissue, is thought to have some part in the cause of atopic dermatitis, so the use of the enzyme histaminase, orally and subcutaneously, is a logical treatment.

When given by mouth, in enteric coated tablets, it has given very good results, but since atopic dermatitis is a disease primarily of the first year of life, this form is not very practical. It will take a longer period, and a more practical method of administration, before we can decide definitely its value in this disease.

THE ENVIRONMENTAL FACTOR

Environmental factors cause eczema in four ways:

1. Inhalation and entrance into circulation by way of the lungs.

2. By contact.

3. Transepidermal, penetration through intact skin.

4. Inhalation and swallowing of allergins with sensitization by way of gastrointestinal tract.

The following environmental factors are the chief ones involved: house dust, goose feathers, chicken feathers, cat hair, dog hair, horse dander, rabbit hair, goat hair, cattle hair, cotton seed, kapok, orris powder, wool, silk, and pollens. The influence of environmental allergens is even more difficult to determine than foods. Scratch tests are most often negative; intradermal tests give better results. It is safe to assume that most infants are sensitive to house dust and feathers and plan environment accordingly. No wool or silk garments should be next to the baby's skin. One of the greatest troubles in allergy is, after getting positive skin tests, finding which tests are clinically significant, and which are of no value. In older children and adults the leukopenic test has some value.

Wagner states that use of vitamin C in infants with eczema has given very favorable results.

LOCAL TREATMENT

Proper local treatment is very important, and pediatricians should give it more attention, for, besides giving the baby considerable temporary relief, it satisfies the mother that something is being done for her child, and enables you to hold the patient long enough to work up your case. While you are testing the case, use carbolated vaseline, calamine lotion with carbolic acid, and equal parts of olive oil and lime water. Do not use soap, except on the scalp, as it is a poison to eczema skins. Do not use water on the skin except when you have added bran, starch, or oatmeal to it. Do not use rubber pants. Phenobarbital given freely to these restless, irritable children will keep down scratching in a more practical manner than bandaging and forcible tying. For the scalp, use boric ointment ten per cent, daily adding a fresh supply, covering with a cap, and in three to seven days, when most of the crust and scabs are removed, you may use a stronger ointment; one drachm each of precipitated sulphur

and salicylic acid to two ounces of vaseline. For the face, clean with olive oil, petroleum oil, or cream, all the scabs, crusts, and scales that may be removed. After that use ten per cent boracic ointment; then in the oozing state use solution of four drachms of liquor of lead acetate, four drachms of aluminum acetate, and water to make six ounces, or boracic acid solution, or potassium permanganate solution.

If the skin is still inflamed, you may use resorcin, boric acid, drachms one each; zinc oxide, drachms three; and water to make six ounces. Then we have the stage for crude tar ointment; crude tar, drachm one; zinc oxide, drachms two; starch, drachms four; vaseline, quantity sufficient to make two ounces.

Schwartz ointment may be used: mercurochrome crystals, grains twenty; salicylic acid, grains thirty; vaseline and lanolin, each ounces two. We may also use a two per cent tannic acid in ky jelly. In later states, when the skin is wrinkled, you may use compound resorcin ointment. For chronic eczema, mercury, coal tar, and oil of cade are often necessary.

Use the same treatment on the body and extremities. Remember the skin may be sensitized to some of these drugs, and you may have contact dermatitis.

In older children, use X-ray treatment as a palliative treatment only. Its effect is only temporary, but it may give great relief while you are starting slower measures that may give permanent relief. Do not use X-ray on young children and only use X-ray by someone with a large experience in X-ray therapy.

PROPHYLACTIC TREATMENT

Children of allergic parents should have prophylactic treatment, such as rubberized covering for mattress, no silk or wool next to the skin, no animal pets; they should be put on evaporated milk and start only one food at a time, watching the skin carefully.

CONCLUSION

Eczema, or atopic dermatitis, is an allergic reaction caused mainly by food and

sometimes by environmental factors. Milk is the most common offender of the foods.

Diagnosis is made by history, scratch tests, intradermal tests, and elimination diets.

One note of optimism in the treatment of these cases is that a spontaneous tolerance develops for most foods in most infants within a few months, resulting in the cure of the majority of these cases in the second year of life.

With all these varieties of treatment, many cases of atopic dermatitis are cured entirely, some are aided materially, and some are not helped at all, except by local treatment.

The further study of histaminase in allergy gives us hope of improving general treatment in this field in the future.

This disease is a pediatric problem, but it behooves us to become better dermatologists and allergists in order to handle these cases successfully.

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PRIVATE PRACTICE OF PUBLIC HEALTH*

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The practice of the pediatricist has undergone many changes in the past and will undergo many more, even in our generation. Although one of the oldest specialties, it, at first, was given over to consultation work entirely. This limitation was gradually removed, however, and the next important change was the infant feeding era, with its multiplicity of difficultly-prepared formulas and countless cases of "summer complaint." This period reached its height during 1905-1920, when there were so few "baby specialists" with so much to do. It has declined with the advent of the boiling, pasteurization, and evaporation of milk, as well as boiling utensils, refrigeration, and the simplification of formulas. We of the vitamin, immunization, and well-baby era have a vast field opening up for us if we will take advantage of it and help in its development. Two years ago the president of our society spoke, in retrospect mostly, on the trend of pediatrics and was rather gloomy in his outlook for the younger men. It seems to me that to be optimistic we need only to grasp a few of the many opportunities opening up in an ever-widening field. The pediatricist comes closer to being a general practitioner (with an age limit) than any other specialist. He has not only the fields of vitamin, immunization, and well-baby work, but also an expanding mental hygiene program, the hardly touched glandular field with its problems of growth and puberty, and allergy, which manifests itself (before the child reaches ten) in some of its forms in eighty per cent of future allergies. All of these fields could have their pediatric specialists just as we have internists specializing in chest, heart, or gastrointestinal diseases. Even if we do not subdivide the specialty, there should be no gloomy outlook; for, even though there may be a reduction in expected income, there is no lack of an opportunity for work. In preventive medicine we are especially likely to be negligent of our duty and criticize the public health officer for doing his.

As one example, let us take inoculations. In 1937, there were 133,148 children in Tennessee under five years of age, and only 45,159 (or 33.9 per cent) of these were inoculated against diphtheria. Over a three-year period (1936-1938) there were 2,876 reported cases of diphtheria and 407 deaths, or over 130 a year. This is a death rate of 4.8 per 100,000, while, during the same period, metropolitan statistics showed a death rate of 1.3 per 100,000. This of itself is damning enough evidence that someone is negligent in his duty, and especially so to the private practitioners, since of these diphtheria cases 17.2 were of fair to good economic status and should have had a private physician and so been inoculated by him. We certainly have the first opportunity for inoculating, since we get most of our patients as infants; where the health officer usually sees them first at five at the summer round-up. As an illustration of what is meant, let me use my own experience. Of my new patients, thirty per cent are newborns and another fifteen per cent are under one year. The balance (fifty-five per cent) are over one year. Of the total, seventy per cent remain as regular patients and should be inoculated by me. Out of the group over one year of age come most of the consultations, transients, and one or two call patients that we cannot count as ours. So that, in reality, more than the seventy per cent remained as regular patients. Of these eighty-eight per cent were inoculated by me for diphtheria and vaccinated for smallpox; seventy per cent were inoculated for pertussis and practically 100 per cent of all those given toxoid were Schick and tuberculin tested. I consider it is as much the doctor's duty to investigate and explain immunizations to parents at the child's first visit as it is to get a complete history. My routine is to vaccinate at three to five months; give pertussis (Sauer) at five to eight months; diphtheria alum toxoid (combined with tetanus) in two doses at eight to ten months; Schick and tuberculin test at twelve to fifteen months; and typhoid at fifteen months to two years. For some time now tuberculin (one-tenth milligram)

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has been given routinely at the same time that the Schick is given. There has been practically no objection upon the parents' part to this procedure; in fact, after the meaning of the test was explained to them, they were anxious for it. It is also now given more or less routinely with the yearly checkups. As a case finder, it has turned up a number of unrecognized cases of tuberculosis in parents, relatives, or servants. The Schick and vaccination are repeated every five to seven years.

In addition to the average private physician neglecting the inoculation field, it seems that the routine yearly or well-child checkup is neglected. How many of you suggest to your patients after an illness or even an office visit that they bring the child back for a complete checkup later? Or if you do suggest the checkup, do you do it thoroughly enough so that the parents feel that it is worth while? Many of the internists are teaching us a lesson along this line, and insurance companies have shown that it is a good investment financially. One of the large companies a few years back paid for this examination on a number of policyholders and found it was paid for in the saving in mortality. They had a complete and thorough yearly physical checkup with advice on diet, rest, and general health measures. In other words, from an investment angle alone—not considering the better health and happiness of the individual—it paid dividends. This is equally true if applied to children.

Now this checkup must be thorough to be valuable and not just a casual look at the throat and partly opening up of the shirt to listen to the heart. There is a film already made by the committee of the American Academy of Pediatrics on cooperation with nonmedical groups and societies giving most of the details of a complete checkup. This film will be shown today. In addition there is being published a pamphlet setting out the minimum essentials of a yearly examination. After first showing this film to the medical profession—through such meetings as this and through local county societies—it is hoped that it will be shown to the public, always by or under the supervision of a qualified physician. This will help to publicize these thor-

ough checkups and make more and more people demand that they be done.

In doing the examination the child should be completely undressed, weighed, measured, temperature and pulse taken, and urine specimen obtained. This can be done by your office assistant. If she is so trained, she can get many essential but routine facts in the history—as regards past illnesses, family history, and inoculations. Of course, many of the important family or past illnesses you will want to inquire into yourself. Then the complete physical examination can be done and this should include the Snellen eye test, a hearing test, orthopedic examination, and, depending upon how recently they have had one, a Schick, tuberculin, or vaccination; and, of course, blood counts, stool examinations, and other laboratory procedures can be done as indicated. Now, of course, this is "old stuff" to practically all of you, yet do *you* do it *all* yourself? If you do not do it and urge it on all the patients you see, someone else is going to do it for you. It may be the health officer or a nationally paid child hygiene worker that will take over your job and it will be no one's fault but your own. In fact, I feel that a good deal of the agitation for state medicine now is due to the fact that we (the medical profession) have gone to sleep and not realized our opportunities. In order to put this program over it is going to be necessary for all of us to show this picture and distribute these pamphlets at Parent-Teacher Associations and other meetings. It may even be necessary to run a series of newspaper articles, sponsored and approved by the local and state medical societies, bringing out the importance of early inoculations and thorough routine physicals. You may say this is salesmanship and is lowering the dignity of the medical profession, but any doctor that does not realize early that he is a salesman of himself, of his knowledge, ability, and training is going to sit in an empty office and wait for a long, long time. This need not just apply to inoculations and yearly checkups, but can go on into the mental hygiene field and all the others. Nor does it mean we are selfish or grasping, for it is something that not only is needed, but wanted by the majority of the people.

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H. H. SHOULDERS, M.D., Editor and Secretary

OCTOBER, 1940

THE ISSUE

SHALL PATIENTS AND DOCTORS RETAIN THEIR FREEDOM OF JUDGMENT IN THE MATTER OF MEDICAL CARE, OR SHALL THIS FREEDOM BE SURRENDERED TO SOME GOVERNMENTAL AGENCY?

EDITORIAL

A PNEUMONIA CONTROL PROGRAM

It is common knowledge that pneumonia is a major cause of death during the winter months in Tennessee.

Great scientific progress has been made in the study of this disease in the last few years. Very effective measures for combatting the disease have been developed and, to a large extent, perfected. In order to bring the benefits of these new developments fully and completely to the public, it is necessary for the entire profession throughout the state to have a clear understanding of the uses, the limitations, and the dangers of these new methods of treatment.

The Board of Trustees of the Tennessee State Medical Association met in Nashville, September 15, for the primary purpose of considering the matter of sponsoring a pneumonia control program for the State

of Tennessee to be carried on with the cooperation of the State Department of Health and under the auspices of the Tennessee State Medical Association. The meeting was attended by Dr. John M. Lee, Chairman of the Council of Health for the State of Tennessee, and Dr. W. Carter Williams, Commissioner of Health for the State.

The matter was seriously considered and the Board took action to sponsor and carry forward a pneumonia control program on behalf of the people of Tennessee.

In order to facilitate the matter of organization, the Board of Trustees agreed to act as an executive committee for the promotion of the program.

All the actual teaching work will be done by Instructor-Consultants, who have been designated by the Board of Trustees.

They are as follows:

For East Tennessee—Dr. E. R. Zemp, Knoxville; Dr. R. B. Wood, Knoxville; Dr. Tim J. Manson, Chattanooga; Dr. E. T. Brading, Johnson City.

For Middle Tennessee—Dr. J. O. Manier, Nashville; Dr. E. L. Turner, Nashville; Dr. O. N. Bryan, Nashville; Dr. W. R. Cate, Nashville.

For West Tennessee—Dr. C. H. Sanford, Memphis; Dr. Tom Mitchell, Memphis; Dr. L. C. Sanders, Memphis; Dr. Alfred Goltman, Memphis.

The Instructor-Consultants met with Dr. H. F. Flippin in Nashville on October 11 for the purpose of deciding definitely upon the course of instruction to be given. It is planned that lectures and demonstrations will be conducted throughout the state. It will not be possible or necessary to hold a meeting in each county. The meeting places will be designated with a view to making them easily available to the largest number of physicians possible.

The success or failure of this effort will be determined by the cooperation given the project on the part of all the practitioners in the state.

Complete information on the program will be forthcoming at an early date.

MEDICAL PREPAREDNESS

In a broad sense the problem before the medical profession is that of supplying the medical needs of the armed forces of the United States and the medical needs of the civilian population.

Both groups will need all forms of medical care; that is to say, both groups will need preventive medicine, curative medicine, hospital care, etc.

It is obvious, of course, that the major needs will be in the civilian population. Soldiers who are inducted into service are physically fit; those who are diseased will be rejected. The aged, the women and children, and the physically unfit, all will compose a portion of the civilian population.

It is necessary, therefore, to meet the needs of the Army and Navy in an efficient way, and in so far as possible without impairing the medical care available to the civilian population.

A Committee on Medical Preparedness of the American Medical Association was created and appointed last June. State committees on Medical Preparedness have been appointed in each of the various states.

Information is being compiled at a rapid rate which will serve as the basis for final decision and action in meeting both these needs.

Certainly doctors will volunteer in sufficient numbers to take care of the needs of the Army and Navy. This has always been the case. Undoubtedly there are doctors who would like to become medical officers in the United States Army and Navy, but who should remain in their present location because of community needs.

Communications have been received from a large number of doctors which indicate that when they are needed they will volunteer. Doubtless a mechanism will be created for making the proper adjustments as between military needs and civilian needs.

One thing is certain, the drafting of doctors must never be a necessity.

TAKE A VACATION

The following is reproduced with the kind permission of the *Detroit Medical News*:

Not often enough does the busy practitioner of the healing art give thought to his own health, and there are more doctors than you would believe who do not take a regular vacation.

There are some few who decide that the odd half day at golf during the summer months is sufficient.

What the doctor needs most is rest and change and relaxation from the strenuous anxious work that is the practice of medicine. It behooves the doctor to give himself a little of his own advice. In these modern days with stress and strain and the tension of world affairs and with the statistics of coronary occlusion mounting, rest is all important.

Get away from the city. Get out in the sunshine and shade. Go fishing, go swimming, get back to nature and let her do some of the things for you that she does for those patients you advise to rest and relax.

Doctor, take a little of your own medicine.

Physician, heal thyself.

NEWS NOTES AND COMMENTS

Dr. Basil T. Bennett, Jr., announces the opening of his office at 802 Medical Arts Building, Knoxville. Practice limited to neurology and psychiatry.

Dr. Willard J. Irwin announces the opening of offices formerly occupied by the late Dr. Reese W. Patterson, 505 Medical Arts Building, Knoxville. Practice limited to otolaryngology and bronchoscopy.

Dr. Henry S. Christian announces the opening of his office at 401 Medical Arts Building, Knoxville. Practice limited to diseases of infants and children.

Dr. D. Scott Bayer announces the opening of an office for the practice of obstetrics and gynecology at 2122 West End Avenue, Nashville.

WOMAN'S AUXILIARY

STATEMENT FOR MEDICAL PERIODICALS

The Woman's Auxiliary to the American Medical Association is making a special effort at this time to awaken widespread interest in its activities by increasing the number of readers of the *Bulletin*.

This little booklet is a successor to the *News Letter*, which, for many years, has kept the officers and board members acquainted with the progress of the auxiliaries of all the States. It is published quarterly and contains reports of conventions, plans of work, inspirational messages from leaders, and news of the hour in the medical world.

It is a great help in promoting interest in local auxiliaries, especially where the program is new.

The fall issue contains the inaugural address of Mrs. V. E. Holcombe, the National Auxiliary president. Also a message to women from Dr. Van Etten, president of the American Medical Association. Many other interesting items are to be found within its forty pages. It is hoped to have 6,000 women, one-fourth of the membership, reading the *Bulletin* before the year is over. In this way the members may keep abreast of the trends in the medical world and be better able to function as members and leaders of the auxiliaries in local, state, and national.

The cooperation of the Advisory Councils and the good will of all members of Medical Associations is earnestly requested.

MRS. GEO. H. EWELL,

Editor.

MRS. H. E. CHRISTENBERRY,
Circulation Manager.

The annual fall meeting of the board of the Woman's Auxiliary was held Friday, October 4, at the Hermitage Hotel. Mrs. William T. Braun, of Memphis, state president, presided over the business session. Officers and chairmen throughout the state and presidents of county organizations were present. Plans for the coming year were made.

Following the board meeting members of the board were guests of the local auxiliary at a luncheon at the home of Dr. and Mrs. Cleo Miller.

We wish to express again our appreciation to Dr. H. H. Shoulders, editor of the *JOURNAL*, for the space allotted to the publication of articles and news pertaining to the Auxiliary. We are grateful indeed that we have the helpful, cordial cooperation of the officers of the State Medical Society, and it is our aim to function in a manner that will reflect credit to them. That we may be better informed as to the affairs that concern the medical profession, I suggest the reading of the *STATE MEDICAL JOURNAL*. Let me urge each county auxiliary to make certain that your state press and publicity chairman promptly receives a full report of the activities of your county in order that we may use most effectively the space allotted to Auxiliary news in the *JOURNAL*.

MEDICAL SOCIETIES

Davidson County:

Papers scheduled to be read are as follows:

October 22—"Experiences in Use of Sulfanilamide in Treatment of Undulant Fever," by Dr. Albert Weinstein. To be discussed by Dr. Hugh Morgan.

"Review of Hysterectomy Operations," by Dr. Albert Sullivan. To be discussed by Dr. R. S. Duke.

October 29—"Syphilis with Surgical Risk," by Dr. Jeff Davis. To be discussed by Dr. J. A. Kirtley.

"Hypertension in Pregnancy," by Dr. W. D. Strayhorn and Dr. G. S. McClellan. To be discussed by Dr. Sam Cowan.

November 5—"Polyposis," by Dr. D. W. Smith. To be discussed by Dr. J. C. Gardner.

"Sinusitis," by Dr. W. W. Wilkerson. To be discussed by Dr. Robert Sullivan.

November 12—"The Uses of Adrenalin in Allergic Conditions," by Dr. Herman Spitz. To be discussed by Dr. Edna Pennington.

"Case Report: Pedunculated Osteoma of External Auditory Canal," by Dr. W. G. Kennon.

Dyer, Lake, and Crockett Counties:

The Dyer, Lake, and Crockett Counties Medical Society met in regular monthly session.

"Toxemia of Pregnancy," by Dr. D. T. Holland, Newbern.

"Treatment of Acute Respiratory Infections," by Dr. E. B. Smythe, Tiptonville.

"Acute and Chronic Colds," by Dr. P. A. Conyers, Dyersburg.

"Preoperative and Postoperative Care of Surgical Cases," by Dr. J. G. Price, Dyersburg.

(Signed) C. L. DENTON, M.D.,
Secretary.

Hamilton County:

Papers scheduled to be read:

November 7—"Obscure Fever," by Dr. Fred E. Marsh.

"Indications for Caesarean Section—Case Reports," by Dr. H. D. Hickey.

November 14—"External Diseases of the Eye" (colored moving picture), by Dr. Stewart Lawwill.

"Thyroidectomy," by Dr. James M. Higginbotham.

November 21—"Irradiation Therapy in Inflammatory Lesions," by Dr. Franklin B. Bogart.

"The Evolution of Gas Anesthesia" (moving picture), by Dr. E. M. Delay.

Knox County:

September 24—"The Use of Sulfanilamide Powder in Surgery," by Dr. C. C. Smeltzer. Discussion led by Dr. E. G. Wood.

October 1—"The Use of Metal in Orthopedic Surgery," by Dr. Herschel Penn. Discussion by Drs. Jarrall Penn, Bagwell, and Patterson.

McMinn County:

The McMinn County Medical Society held its regular meeting on September 19. The next meeting will be a tri-county meeting with Loudon and Monroe County, to be held in Athens.

Dr. B. T. Bennett, Jr., of Knoxville gave an interesting and instructive talk on "Psychiatric Problems." Following this talk he showed a film on "Insulin and Metrazol Shock Therapy," demonstrating work in which he himself took part.

This county has had a change of public health physicians. Dr. A. W. Reeser succeeds Dr. H. A. Morgan, Jr.

(Signed) M. LOU HEFLEY, M.D.,
Secretary-Treasurer, McMinn County
Medical Society.

Washington County:

Washington County Medical Society held its regular monthly meeting Thursday, October 3, John Sevier Hotel, Johnson City. Dr. Hugh Swingle was accepted as a new member.

Dr. H. D. Miller and J. G. Moss showed a movie illustrating "Caesarean Section on a Patient with Double Uterus"; "Posterior Colporrhaphy for Third Degree Laceration"; "Modern Surgical Treatment for Varicose Veins."

There were eighteen members and five visitors present.

At the next meeting, November 7, the society will be guests of Veterans Facility, Mountain Home, at a dinner meeting.

(Signed) WALTER D. HANKINS, M.D.,
Secretary-Treasurer, Washington
County Medical Society.

OTHER MEDICAL SOCIETIES

At the meeting of the East Tennessee Medical Society held at LaFollette in September, Tate Springs was chosen as the next meeting place—September 11 and 12, 1941.

The following officers were elected: Dr. U. S. Carden, LaFollette, President; Dr. L. S. Nease, Newport, Vice-President for Upper East Tennessee; Dr. Claude Taylor, Cleveland, Vice-President for Lower East Tennessee; Dr. J. M. McCulloch, Maryville, Secretary-Treasurer.

The Middle Tennessee Medical Association will meet for one day only, November 21, in Franklin. Dr. Rollin A. Daniel, Jr., Nashville, is Secretary of the Association.

COMING MEETINGS

American Medical Association, Cleveland, Ohio, June 2-6, 1941. Dr. Olin West, 535 North Dearborn Street, Chicago, Secretary.

Southern Medical Association, Louisville, Kentucky, November 12-15. Mr. C. P. Loran, Empire Building, Birmingham, Alabama, Secretary.

Tennessee State Medical Association, Nashville, April 8, 9, 10, 1941. Dr. H. H. Shoulders, Secretary.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By HUGH BARR, M.D.
Medical Arts Building, Nashville

Postoperative Atelectasis. Lloyd H. Mousel, M.D.
Journal of American Medical Association, September 14, 1940.

Misjudgment in certain cases undoubtedly is responsible for the development of atelectasis. Among the causes suggested for this condition are angioneurotic edema and also bronchial spasm. The vasomotor theory suggests that dilatation and stasis in the blood vessels might produce obstruction in the bronchioles by an outpouring of secretion. It is the author's opinion that it is caused by the plugging of a bronchus or several bronchi by tenacious secretions, mucus, blood, or vomitus.

The symptoms are dyspnea, pain, rapid pulse, fever, and cyanosis. Too much preoperative and postoperative sedation should be used sparingly so that the patient's reflexes may return to as near their normal state as possible.

This condition may be prevented and combatted by tracheobronchial aspiration by direct vision, inhalation of five or ten per cent carbon dioxide and oxygen, and the patient turned frequently in bed and encouraged to breathe deeply and to cough. After atelectasis has occurred bronchoscopic aspiration quickly relieves all the symptoms and recovery is dramatic.

DERMATOLOGY

By A. H. LANCASTER, M.D.
Suite 401 Medical Arts Building, Knoxville

Lichen Planus Treated with Bismuth Arspenamine Sulfonate (Bismarsen). Adolph H. Conrad, M.D.; Adolph H. Conrad, Jr., M.D.; and Richard S. Weiss, M.D., St. Louis, Missouri. Southern Medical Journal, July, 1940.

The most attractive feature of this paper is its absolute fairness. The essayists seemingly spared no trouble to determine the condition of their patients before instituting treatment, but they also kept a sustained check during their treatment, and though they may have been biased in favor of their choice of treatment they never permitted this to color their findings. In their findings, they were extremely fair and threw them into the listener's laps for their own evaluation. This attitude is peculiarly gratifying in so controversial a matter as the adequate treatment of lichen planus.

They introduce another interesting prospect in the treatment of lichen planus in their administration of vitamin C. Our present results are none too satisfactory and the introduction of even the muchly stressed vitamin is hopeful.

The age range of the twenty-five reported cases is another interesting point, for though one patient was only ten years of age and six averaged thirty-four, the entire group averaged sixty-three years of age.

The heavy metals have always been relied upon chiefly. Antedating the serologic diagnosis of syphilis, mercury by mouth, in what was then considered herculean doses, produced such gratifying results in early lichen planus that there was a definite connection between lichen planus and syphilis in the minds of early dermatologists.

The essayists approve of X-ray conjointly with bismarsen medication, and in many cases it is of material assistance, but will invariably intensify the pigmentation which is inherent in the disease itself. Again, as in psoriasis, if it will do any good whatsoever, this will be manifest in two or three treatments.

It is extremely gratifying to read so fair a report of painstaking effort, and future reports are therefore promising and awaited.

The Drs. Walter F. Lever and John H. Talbott used sixty-eight healthy individuals and 181 dermatologic patients for experimental data to determine the role of vitamin C in affections of the skin.

Their procedure was very exact. They gave large amounts of vitamin C in healthy persons. Forty-three nurses of the Massachusetts General Hospital and twenty-five students of the Harvard Medical School were selected as controls with no regard to their dietary habits.

They quote reports in current literature on a number of diseases, including psoriasis, with good results; urticaria, with good results; lupus vulgaris, with poor results; lupus erythematosus, with poor results; generalized exfoliativa dermatitis, one case with excellent results; eczema, with doubtful results; and pemphigus, with doubtful results.

Eighteen patients, with a low level of vitamin C, were given daily, over a period of two to ten weeks, 200 milligrams by mouth and at the end of this period the average level in the blood was .97 milligram per hundred cubic centimeters. There were five patients with urticaria, four with lupus vulgaris, three with eczema, two with generalized exfoliativa dermatitis, two with psoriasis, one with purpura, and one with pemphigus. None of these showed improvement which could be attributed to the high intake of vitamin C.

In persons with cutaneous diseases, the level was .36 milligram per 100 cubic centimeters due to diminished consumption of vitamin C.

Apparent good health may be maintained with a low concentration of vitamin C in the body.

ROBT. G. HENDERSON, M.D.,
1406 Exchange Bldg., Memphis, Tenn.

FEVER THERAPY

By E. E. BROWN, M.D.
Doctors Building, Nashville

Value of Fever Therapy in the Arthritides. E. E. Simmons, M.D., Instructor in Medicine, University of Nebraska College of Medicine, Omaha, Nebraska. *American Journal of Medical Science*, 194: 2, 170, August, 1937. (From the University of Nebraska Fever Research Department, Bishop Clarkson Memorial Hospital, under direction of A. E. Bennett, M.D.)

At the time of this report the authors had treated 172 arthritic patients, of whom this report covers eighty-one cases.

SUMMARY

Of nine cases of acute rheumatic fever with active endocarditis, six became inactive in an average of twenty-four days, following an average of five fever treatments. Three cases of acute rheumatic fever with active endocarditis and complications by chorea became inactive in an average of forty-six days, following an average of nine fever treatments. We think this is a marked improvement over any other type of therapy now used and justifies further investigation of this method of treatment.

Of twenty-three cases of gonorrheal arthritis, eighty-two per cent were cured or markedly improved after an average of twenty-six hours of fever maintained between 106 and 107 degrees Fahrenheit. We believe that a minimum of at least twenty-five hours of fever of this elevation is necessary before concluding this therapy is a fail-

ure. It is the best type of therapy known to date, and should be instituted early. Orthopedic measures may be necessary.

We believe artificial fever therapy is a valuable adjuvant, along with dietary, supportive, and orthopedic measures, in the treatment of atrophic arthritis. This combination of treatment was of benefit in seventy-eight per cent of patients treated.

Hypertrophic arthritis is benefited by artificial fever therapy only in those cases where there is a superimposed traumatic and infectious element.

In any type of arthritis, with or without an infectious element, we think that heat, the oldest known and most universally applied type of therapy, is a justifiable therapeutic measure. Other means of producing febrile reactions are not so efficiently controlled nor so safe, in our opinion, as mechanically-induced fever therapy. The beneficial effects of fever therapy in the arthritides, with the possible exception of gonorrheal arthritis, are in all probability not solely bactericidal, but rather the result of the beneficial effects of vasodilatation and increased immunologic response.

OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.
Suite 234 Doctors Building, Nashville

Effect of Vitamin K Administered to Patients in Labor.

J. E. Fitzgerald and Augusta Webster, Chicago, Illinois. *American Journal of Obstetrics and Gynecology*, September, 1940.

Since its discovery by Dam, vitamin K has been used successfully in the treatment of hemorrhagic disease of the newborn, and in the management of obstructive jaundice, before and after operation. This is a preliminary report of observations made on changes to patients in labor. A modification of the simplified bedside technique of Smith, Ziffren, Owen, and Hoffman was used and is described. Charts show the changes in the ability of the blood to clot. This series of cases has been studied in an effort to determine the effect of vitamin K administered to women in labor. Control cases show practically no change in the maternal prothrombin during and after labor. Patients treated with oral Klotogen during labor show a definite rise in the maternal prothrombin level at the end of labor. There is also a definite rise in the average level of the cord blood. Patients treated with intravenous synthetic vitamin K show approximately the same elevation of prothrombin levels. A small series of cases that was given sodium pentobarbital as an analgesic showed a definite depression in the prothrombin levels of both mother and child. This depression probably can be prevented by the proper use of vitamin K.

OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.
Doctors Building, Nashville

Corneal Ulcer and Sulfanilamide. Roggenkamper. Archives of Ophthalmology, September, 1940.

Roggenkamper says that for a period of six months he treated all persons with corneal ulcer with sulfanilamide. The substance was given internally and by conjunctival injection, but the author did not neglect to employ also the former therapeutic measures, such as shock therapy in the form of intramuscular injections of milk and the customary local methods. Thus the subconjunctival injection of sulfanilamide was an auxiliary measure in the twenty-six cases on which this report is based. In fifteen of the twenty-six cases there existed posttraumatic serpiginous ulcers of various ages and extension, and in nearly all of them hypopyon ulcer existed. In all these cases the therapeutic results were surprisingly favorable as regards rapidity of cure as well as the final results.

Among these cases of serpiginous corneal ulcers, there were some which at the time of hospitalization gave the impression that only splitting of the cornea would prevent a panophthalmia. However, treatment with sulfanilamide made this unnecessary. The delicacy of the resulting corneal scars and the visual acuity were surprising. This applies to new cases in which the ulcers yielded to from one to three injections as well as to old cases in which nearly all hope had been abandoned and in which from six to eight injections of .5 cubic centimeters each were necessary to produce epithelization. Surgical operations were unnecessary, and the author regards this as an essential advantage of sulfanilamide therapy. For the scrofulous and catarrhal ulcers of the cornea the effect of the subconjunctival injections of sulfanilamide was not as favorable as for the typical serpiginous traumatic ulcers, but even there a favorable effect could be noticed. It is possible that the bacterial superinfection of those ulcers was excluded by the sulfanilamide. Favorable effects of subconjunctival injections of sulfanilamide were observed also in two cases of persistent parenchymal infiltrations following erosions and in three cases of infected erosions. In superficial keratitis, however, no effect was noticeable. The author concludes that sulfanilamide is of great value in the treatment of infectious corneal diseases, and that it may make surgical operations superfluous for serpiginous ulcers.

PEDIATRICS

By JOHN M. LEE, M.D.
Doctors Building, Nashville

Schilling Blood Count in Juvenile Lobar Pneumonia Treated with Sulfapyridine. Preliminary Report. Julian L. Rogatz, M.D., New York. The American Journal of Diseases of Children, September, 1940.

When repeated at frequent intervals in the course of an acute infection, the Schilling blood count of immature leukocytes (nonfilamented granulocytes, or band forms) anticipates the appearance of a complication, improvement or other change twenty-four hours or more in advance of its appearance clinically. In a study of thirty-one untreated cases of lobar pneumonia in the young, Schilling blood counts were made daily, and it was noted that the percentage of immature granulocytes was markedly increased during the height of the fever, and that a sudden decrease in these cells preceded the crisis by many hours. It was observed in untreated cases of pneumonia that the first decrease in these immature granulocytes occurred on the fifth to the seventh day of the illness, the blood improved gradually and reached normal about the tenth to the fourteenth day after onset of the disease.

The author studied daily Schilling blood counts on eleven children with classic lobar pneumonia treated with sulfapyridine. Roentgenograms, blood cultures, and pneumococcus typings were made on all these cases. In these cases there was the dramatic fall in temperature and clinical improvement which sulfapyridine usually produces, but the Schilling blood count was the same as that noted in untreated cases of pneumonia. In the sulfapyridine treated cases the first decrease in the immature granulocytes did not appear until the fifth to the seventh day and the blood did not return to normal before the tenth to the fourteenth day.

The author feels that the Schilling blood count is a more accurate indicator of the status of the pathology of acute infection than clinical evidence. For this reason and as a result of this study, he does not agree with those who believe that sulfapyridine not only interrupts pneumonia clinically, but also hastens resolution. He feels that in spite of the use of the drug there is a continuation of the hepatization and resolution which characterizes the course of the untreated patient.

It is further concluded that it is wise to continue convalescence in the sulfapyridine treated pneumonia patient until the blood smear has returned to normal.

Eleven case reports are given with tables and charts.

ROENTGENOLOGY

By FRANKLIN B. BOGART, M.D.
Medical Arts Building, Chattanooga

The Present Status of Roentgen Treatment of Sinus Infections. W. B. Firor and C. A. Waters. *American Journal of Roentgenology and Radium Therapy*, Vol. 42, No. 6, p. 857, December, 1939.

The experimental and clinical reports on the effect of roentgen rays on infected sinuses is reviewed. The conclusions of Larsell as to the way in which changes are induced are quoted as follows:

"The effect of the X-ray treatment appears to be due primarily to an early destruction of the lymphocytes in the infected membranes. About forty-eight to seventy-two hours after treatment of membranes which had been infected for several weeks, there appears to be an increase in the number of macrophages. These are believed to come in response to substances released by the breaking down of the lymphocytes. These macrophages are seen to be laden with cellular debris and dead pigments. It is possible that they also engulf bacteria.

The membrane becomes gradually reduced in thickness, but retains numerous plasma cells, polymorphs, and some histocytes. After a week or more some fibrosis appears.

There is no evidence of injury to the cilia, epithelium, or cellular elements, other than the lymphocytes as the result of X-ray dosage. The fibrosis is considered a result of the inflammatory process, and the increased number of histocytes immediately following the injection.

Five types of sinusitis are discussed and the effectiveness of roentgen therapy in each discussed.

1. Acute sinusitis. Most of these cases clear up under the usual treatment of inhalations, packing, suction, and washings. Because of this, as well as the tension in the affected sinus, roentgen treatment is not indicated. After good drainage has been established, one or two small doses may hasten convalescence. In our opinion, it is wise to withhold irradiation for other types, even though the underlying pathology is like that of any other acute infection. The membrane becomes edematous, heavily infiltrated with leucocytes, and pours forth a dense inflammatory exudate. We were unable to obtain a membrane in this stage of infection because radical operations are never performed until the process has subsided to some degree.

2. Subacute sinusitis. These cases constitute a group not treated nor cured by the usual methods. When examined roentgenographically after washing, the antra are observed to have very thick membranes enclosing a small air space. Unless treated by radical operation or irradiation, they often become chronically infected. The membrane, being filled with lymphocytes and a smaller number of polymorphonuclears, is very radiosensitive.

3. Chronic sinusitis with thickened membrane, but without polyp formation. This group is made up largely of patients who did not consult a rhinologist sufficiently early. Others have not been adequately treated or have resisted the usual forms of treatment. This group is also very radio-sensitive, being only slightly less so than the subacute group. Microscopic section shows dense infiltration of the submucous area by large numbers of lymphocytes and a moderate number of polymorphonuclear and plasma cells. This is more plainly seen in the higher magnification. The mucous glands appear normal. One can expect a favorable reaction to irradiation here also because of the cellular infiltration of the submucosa.

4. Chronic sinusitis with much scar tissue or polyp formation. This group constitutes a later developmental type in the course of sinus disease. Because of the presence of scar tissue and relatively little cellular infiltration this group is less sensitive than the preceding, although early scar tissue and polyp formation may be affected moderately by fractional highly filtered radiation, whereas later fibrosis and polyposis is affected only slightly, if at all.

5. Atrophic sinusitis. This group is radio-resistant.

The importance of cooperation between the radiologist and rhinologist is stressed.

In classifying their results the authors consider cures as those in which symptoms disappeared completely and in which the sinuses became clear—thirty-four per cent.

Those cases were classed as markedly improved in whom the symptoms completely or almost completely disappeared, but in whom slight clouding remained on the X-ray films of the sinuses—thirty-eight per cent.

These cases reported as moderately improved were relieved of their symptoms for only a few weeks or months—thirteen per cent.

TECHNIQUE

Four biweekly doses of 100 r. In a few cases, six such treatments were given. Factors were 125 kilovolts, five milliamperes, thirty-five centimeters distance, and four millimeters aluminum.

SUMMARY

Irradiation is finding a progressively wider range of usefulness in paranasal sinus infections by virtue of the fact that many subacute and chronically infected sinus membranes are infiltrated with lymphocytes. This is frequently true of patients who have not responded to other types of therapy. The dosage required is well within the limits of safety. We hope that radiologists will not accept patients indiscriminately, as such action may be detrimental to the method. This can be avoided largely by proper cooperation with the rhinologist.

SURGERY—GENERAL AND ABDOMINAL

By BATTLE MALONE, II, M.D.
1400 Monroe Avenue, Memphis

Repair of Inguinal Hernia. William Francis Remhoff, Jr., M.D. Surgery, 8: 326 (August), 1940.

Following a historical survey of the subject the author discusses the advances in hernia surgery made in the last forty years. Attention is called to the work of Bloodgood, who recognized the frequency of recurrence at the lower angle of the wound through the external ring directly due to insufficient conjoined tendon.

Not infrequently there is found an undeveloped or an acquired atrophy of the conjoined tendon. Also it is more frequent to find the internal oblique muscle and its aponeurosis more strongly developed than the transversus and inserting separately on the ventral sheath of the rectus muscle and fusion between the two more often takes place just before insertion on the rectus muscle sheath. If the aponeurosis of the internal oblique and transversus muscles are not fused the conjoined tendon is absent, but the sickle-shaped band of fibers in the accentuated aponeurosis of the internal oblique muscle usually is definable. It is asserted that the presence or absence of a conjoined tendon has nothing to do with the strength or weakness of the lower inguinal fasciae.

An improved operative technique is offered which augments the fascia present in the lower inguinal region and permits a suture closure without producing tension. The method employed is similar to that described by Halstead with the exception of the manner in which the lower angle of the wound is closed. Meticulous hemostasis is observed and fine silk sutures are used routinely. Transplantation of the cord is not done. Sharp dissection of the sac is done followed by high ligation with a transfixion suture employed. The upper or medial flap of the incised external oblique aponeurosis is dissected medially well past the semilunar line. Thus the lateral half of the anterior rectus sheath is exposed. A vertical incision is then made through the anterior sheath of the rectus exposing the pyramidalis muscle and also a portion of the lower rectus muscle. The incision extends from the superior ramus of the pubic bone to as far as the medial reflection of the aponeurosis of the external oblique and transversus muscles with fine silk mattress sutures. The aponeurosis of these two muscles is then sutured to the shelving portion of Poupart's ligament, thus strengthening the weak area or Hesselbach's triangle. The flaps of the external oblique aponeurosis are overlapped with interrupted sutures of silk and the superficial fascia and skin are closed. It is felt that the recurrence rate is greatly reduced by this technique.

UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.
By G. A. WILLIAMSON, JR., M.D.
307 Doctors Building, Knoxville

Hypertension and Chronic Atrophic Pyelonephritis. Results of Nephrectomy. Nelson W. Barker, M.D., and Waltman Walters, M.D., Rochester, Minnesota. Journal of American Medical Association, September 14, 1940.

Goldblatt and Freeman produced hypertension in dogs by partial obstruction of the renal arteries. This has stimulated a more careful search for localized renal disease in essential hypertension in the human being. Although in many cases of essential hypertension no evidence of chronic pyelonephritis can be demonstrated, the association of these conditions is frequent enough to be more than incidental. Butler, Barney, Crabtree, and Leadbetter have each reported cases of unilateral pyelonephritis with hypertension. The hypertension disappeared after nephrectomy.

These writers report five cases of unilateral pyelonephritis with hypertension, all of whom had a return of normal blood pressure after nephrectomy. All had contracted atrophic kidneys, extensive chronic pyelonephritis with destruction of renal parenchyma and marked thickening of the arterial wall in the scarred regions. None of the patients had evidence of advanced organic damage. All cases had a relatively high diastolic pressure compared with the systolic.

The cause of the marked thickening of the walls of the renal arteries has not been determined. It may be a part of the chronic inflammatory reaction in the renal parenchyma, it may be the result of contraction of the scar tissue, or it may result from obstruction of the capillaries in the parenchyma.

A further study of fifty-seven consecutive cases seen in the clinic and diagnosed by urological examination as chronic pyelonephritis disclosed that 46.6 per cent had a blood pressure greater than 145 systolic and ninety diastolic.

Next a consecutive series of twenty-four cases in which a nephrectomy was performed and a pathological diagnosis made of chronic atrophic pyelonephritis revealed a preoperative blood pressure of above 145 systolic and ninety diastolic in 62.5 per cent. There is no complete postoperative follow-up data on these cases.

It is the opinion of these authors that in these five reported cases the return of the blood pressure to normal levels and its persistence at normal levels following nephrectomy is ample evidence that the diseased kidney was the chief factor in the production of the hypertension.

BOOK REVIEW

Neoplastic Diseases. James Ewing, A.M., M.D., Sc.D., LL.D., Professor of Oncology at Cornell University Medical College, New York City; Consulting Pathologist, Memorial Hospital. Fourth Edition, Revised and Enlarged; 1,160 pages with 581 illustrations. Publishers: W. B. Saunders Company, Philadelphia and London, 1940. Cloth, \$14.00.

The author makes the following statement in the preface:

"The past decade witnessed such notable additions in many departments of the knowledge of neoplastic disease as to call for extensive revision of many sections and complete rewriting of some chapters of this book. Contributions to the literature from the various sciences, physics, chemistry, physiology, and genetics, have greatly increased, and now special treatises are required to deal adequately with these subjects. In general pathology and clinical medicine, the multitude of contributions has been even greater, and the number and scope of the special treatises in these fields have steadily increased and the demand for them has become more urgent. While no single book can fully meet the requirements of specialists in all these fields, the need for a general critical review, as comprehensive as possible and collecting the essential facts and principles in all departments, is probably greater than ever before. In this fourth edition, much old material, mainly of historical interest, has been omitted, together with the references; discussions of many debatable tumors have been excluded and controversial re-

ports have been curtailed, making room for many new contributions of importance. It is hoped that the book is more readable and informative."

The author's statement in the preface, above quoted, is an accurate representation of the changes that have been made in the book.

It is a standard work on the subject. Nothing more need be said.

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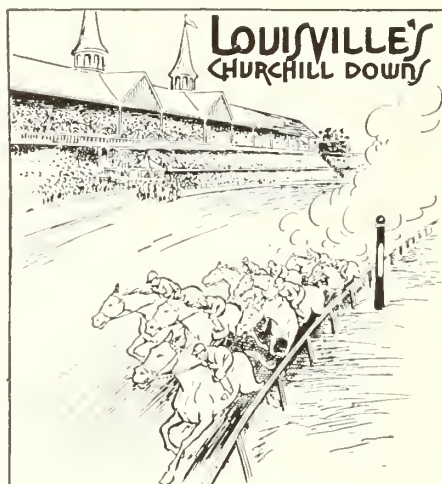
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No. 11

THE TREATMENT OF WOUNDS OF THE FACE*

ROLLIN A. DANIEL, JR., M.D., Nashville

The frequency with which injuries of the face are encountered, most of them received in automobile wrecks, justifies occasional reviews of the principles involved in their proper treatment. This paper is not concerned with the plastic reconstruction of old injuries, but is intended rather to call attention to basic factors in wound healing and the measures to be employed by the general surgeon in his attempt at restoration of conditions which favor kindly healing.

Although the same factors which influence wound healing in general are applicable to the repair of facial defects, the results of loss of tissue and of complications in wound healing may be much more disabling and disfiguring with wounds of the face than if the same injury were located in another part of the body. However, careful treatment carried out as early as possible following the injury will in most cases result in surprisingly little disfigurement and in most instances no mechanical disability.

Many factors may exist which will contribute to interference in the healing of any wounds, and these may be roughly divided into local and general factors. The latter includes such conditions as avitaminosis, dehydration, disturbances in protein and carbohydrate metabolism, and the

presence of coexisting debilitating diseases, and will not be discussed here. That the treatment of wounds of the face must follow the treatment of shock, when this is present, is as true in these conditions as with trauma affecting any other portion of the body. It should be remembered that since these wounds often contribute largely to the production of shock, their repair may be a desirable measure in the treatment of shock itself, even though the immediate suture of wounds cannot usually be considered in itself a lifesaving procedure.

If the patient is in shock, however, only the simplest and most rapid procedures should be carried out, and comparatively little emphasis should be placed on cosmetic results. Long or complicated procedures must be deferred, resorting to secondary plastic operations later if they are needed. If the patient's general condition is so poor as to prevent any immediate attempt to repair the wounds, great care should be taken to prevent further contamination. When this is done, secondary closure can often be done when the condition of the patient has been improved.

Local factors of importance are, briefly, as follows:

1. The extent of the wound in the soft tissues.

2. The number and type of bacteria in the wound.

*Read before the Tennessee State Medical Association, Chattanooga, April 9, 10, 11, 1940.

3. The amount of foreign material.
4. The presence and amount of injured and devitalized tissue.
5. The presence and extent of fractures of the facial bones.
6. The extension of wounds into the oral cavity.

Other factors of occasional importance include the division of branches of the facial nerve, injuries to the salivary and lachrymal ducts, and, always to be looked for, injuries to the brain.

X-ray examination is often helpful in facial injuries, especially when they involve the superior maxilla. If the patient has been unconscious or if there is any physical evidence suggestive of brain injury, X-rays of the skull should be obtained and it may be necessary to delay repair of the facial wounds until the presence and extent of intracranial damage is accurately determined. It must be remembered that neglect of contaminated wounds of the face and head may result in infections which in themselves are more dangerous than the existing brain injury.

The diagnosis of facial injuries and the accurate definition of their extent usually is not difficult and can be done visually and by palpation. Thus, it may be possible to proceed directly to the cleansing and preparation of the wounds for suture without losing valuable time obtaining X-rays of the facial bones.

THE PREPARATION OF WOUNDS FOR REPAIR

Bacteria present in contaminated wounds may be of two types: those from human sources and those from outside or inanimate sources.¹ The former are much more dangerous. The use of contaminated instruments, fingers, and dressings, as well as contamination from the unmasked nose and mouth, either from bystanders or by the surgeon in his anxiety to determine the extent of the injury or to stop bleeding, serve to introduce more bacteria into the wound, usually of a type more virulent than are present already. These are factors which can be easily controlled simply by the application of a sterile dressing which is left in place until the wound can be cared for under aseptic conditions.

At the present time there are two methods of common practice in the removal of bacteria from contaminated wounds. The first and, unfortunately, probably the more frequent, is by the use of chemical antiseptics. The ease with which they can be employed and the persuasive sales data of the drug companies have both contributed to the continued use of these agents, none of which are capable of destroying bacteria without relatively extensive damage to living tissue.

The second method is that of mechanical cleansing. The use of soap and sterile water, the latter in large quantities, will remove most of the bacteria which are present on the wound surfaces in the same way that organisms are removed from the hands by scrubbing preparatory to operations. The wound should be thoroughly irrigated with large quantities (in extensive injuries 1,000 to 2,000 cubic centimeters) of sterile normal saline (or water if saline is not available) and all gross foreign material *gently* removed. The use of antiseptics in the wound following mechanical cleansing is also harmful, since the amount of damage to the tissues greatly outweighs any benefit which might be expected from destruction of bacteria which remain.

During the last World War, on the basis of clinical experience gained there, and the previous experiments of Friedrich² and of others, extensive debridement was practiced, even to the complete excision of the wound. In general, this method of treatment has become less radical. As the loss of any considerable amount of tissue from the face results in deformities which are objectionable both from a cosmetic as well as a functional standpoint, debridement of facial wounds should be carried out with extreme caution. In general, one should preserve all tissue which may possibly remain viable. Tissues at first thought to be hopelessly devitalized will often be found to be viable when the wound is properly cleansed. The paring of ragged and beveled skin edges, in order that the edges may be more nearly clean-cut and at right angles to the skin surface, is often advisable, but

as little skin as possible should be sacrificed.

REPAIR OF WOUNDS

All wounds of the face, even very small and apparently trivial ones, should be cleansed and sutured. The depth and possible presence of foreign bodies can only be determined by exploration of the wounds. When the skin edges are pulled together with adhesive, dead space is left in the depths of the wound, the skin edges are rolled in, infection is more likely to occur, and healing is retarded and results in more scarring and subsequent contracture than would occur if the wound were properly closed.

With most accidental wounds of the face, primary suture may be carried out with the expectation of primary healing within a period of about eight hours after receipt of the injury. A careful history regarding the manner in which the wound was inflicted and the care of the wound, including the possibility of its exploration with contaminated hands and instruments and the application of soiled handkerchiefs and such materials as dressings, may be of great help in deciding the proper course to be taken. Primary suture may be successfully performed in many cases as long as twenty-four hours after the injury is received if the wound has not been further contaminated and traumatized in the meantime.

The proper treatment of wounds of the soft tissues may be briefly summarized as follows: Careful hemostasis and accurate apposition, layer by layer, of the wound edges. The most important single factor in the technique of this procedure is unquestionably careful, gentle handling of tissues. Small clamps should be used to control bleeding. Only the bleeding vessel should be clamped and this should be ligated with very fine material. The use of large clamps and forceps and of large needles should be avoided, since they crush and injure more tissue than is necessary. Mass ligation of tissue and large bites of tissue within sutures are especially to be condemned because such procedures greatly add to the amount of devitalized tissue already present.

The method of suturing the skin edges is of some special importance. All sutures through the skin leave permanent marks. The use of subcuticular sutures of fine suture material will aid in diminishing the size of these marks by decreasing the tension of the skin sutures and allowing their earlier removal. The use of occasional wide sutures tied over a pad of gauze, as has frequently been advocated by Brown,³ helps to accomplish the same thing. Suture marks usually will be larger when a cutting needle rather than a round needle is used, but in either case one of small size is desirable.

In spite of the most meticulous care, resulting scars may be of such width and irregularity as to justify excision and secondary closure later. For this reason, it is well to place the skin sutures, at the time of primary suture of any facial wound, very near the skin edges. Wide suture marks are thus avoided. Fine silk or horsehair should be used in suturing the skin.

Sutures and ligatures are foreign material, and since they produce tissue reaction, as little as possible of this material should be left in the wound. The ideal of exacting hemostasis and accurate closure should not be sacrificed, however, and a minimum of foreign material of this type should be accomplished by the use of sutures and ligatures which are of very small size rather than by decreasing the number of sutures. Halsted⁴ first introduced fine silk as a suture material, and during recent years the work of many investigators^{5, 6, 7} and the clinical observations of an increasing number of surgeons has resulted in a gradual increase in its widespread use. Regardless of the type of suture material used, it should be quite small, and interrupted sutures are preferable to long, continuous ones. The care exercised by the surgeon in handling delicate suture material probably contributes to the better healing of the wounds because this delicacy of touch is necessarily repeated in the handling of tissues.

Most contaminated wounds of the face which have been properly cleaned and sutured should be closed without drainage.

The purpose of careful removal of foreign material, devitalized tissue, and the avoidance of the use of large suture material, should not be defeated by the placing of a foreign body in the form of a drain in the wound. The chances of subsequent infection are increased by so doing.

The suture of a long flap of skin and subcutaneous tissue may greatly interfere, because of tension, with a blood supply which is barely able to support it without tension. It is better to leave the flap unsutured than to lose it. A few sutures in the base of the defect may diminish its size and relieve the tension on the sutured flap. Great care should be taken to secure absolute hemostasis in these flaps, since the presence of blood clots under them will retard healing and result in further contracture of the base of the flap. Moderate pressure should be applied to this type of wound for several days.

Loss of tissue, if extensive, must eventually be corrected by replacement with tissue from other parts of the body if a good result is to be obtained. Skin defects can be filled with free skin grafts, and the use of these transplants at the time of the primary repair will in many cases greatly shorten convalescence and give a satisfactory functional and cosmetic result. The types of skin graft most satisfactory for this purpose are the thick split graft,⁸ the small, deep or "pinch" graft, and the free, full thickness graft, or the "sieve" graft of Douglas.⁹ The merits and disadvantages of these various types of graft will not be discussed here except to say that the chance of taking on contaminated or infected wounds is less with full thickness than with "pinch" grafts or grafts of intermediate thickness.

Openings through the buccal mucosa into the floor of the mouth should be sutured, and dependent drainage through the skin should always be used. These drains, however, may be removed in most cases in from forty-eight to seventy-two hours. If small oral fistulae persist, they usually will close spontaneously.

When wounds of the nose or of the ear extend through the cartilage, the edges of

the cartilage should be sutured together in their correct position as a separate layer, the skin and subcutaneous tissue being closed over this suture line.

Fractures of bones of the face will not be considered in detail. The most common types of fractures are as follows:

1. Fracture of the mandible. Fractures at any site, if the teeth are present, can usually be immobilized in good position by simply wiring the lower to the upper teeth. If the teeth are in good occlusion, the fragments will, on subsequent X-ray examination, be found to be in satisfactory apposition. Immobilization should be maintained from four to six weeks. No teeth which are still present, even though they are loose, should be extracted. It must be remembered that all fractures of the body of mandible are compound fractures, and dependent drainage should be established through small stab wounds under the mandible. Fractures of the body of the mandible are almost always accompanied by fractures of the ramus on the opposite side, most frequently through the condyloid process. If the teeth are not present open reduction and fixation with silver or malleable stainless steel wire is usually the most simple and effective means of treatment.

2. Fractures of the zygomatic bone usually result in posterior and inferior displacement, the lateral portions of the orbital floor usually being depressed. Elevation of the arch can easily be accomplished by the use of a sound passed under it through a small incision in the mucosa under the upper lip, and, unless the fracture is a badly comminuted one, the entire bone can be elevated and will remain in place by this maneuver.

3. Fracture of the nasal bones should always be corrected by elevation of the fragments. Both nostrils should be packed with gauze to maintain the fragments in their proper positions and to preserve an adequate airway. Swelling and discomfort can be minimized by the use of large external pressure dressings. The nasal packing may be removed in from forty-eight to seventy-two hours.

4. Transverse fractures of the superior

maxilla, with displacement downward, may be maintained in a satisfactory position in most cases by the same measures employed for fractures of the lower jaw, namely, wiring the teeth together in proper occlusion. The use of interdental splints will rarely be necessary if the teeth are present.

These measures are simple. More complicated devices are not necessary in most cases and should be avoided unless they are needed.

The aftercare of extensive injuries of the face is of great importance. The principle of rest is of greatest importance. Douglas,¹⁰ in emphasizing the importance of rest, says: "If one thinks of any wound as a fracture of the skin just as he would think of the fracture of a bone, better healing will be obtained."

Rest in bed, the reduction and adequate immobilization of fractures of the facial bones, the use of large dressings applied with firm, evenly distributed pressure, and the suture of wounds in such a way as to obtain a minimum of tension on wound edges, all contribute to this accomplishment. Dressings should be changed infrequently unless infection occurs, and then only frequently enough to assure adequate drainage and proper cleanliness.

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DISCUSSION

DR. W. M. ADAMS (Memphis): Doctor Daniel has given a very timely subject and has presented it in a most excellent manner. The subject is one which cannot be too greatly emphasized. The important principles which he has brought out, those of thorough cleanliness, gentle handling of the tissues, and accurate apposition of the tissues with

a general application of detail, are ones which are most essential for the best result.

The small cutting needle has a distinct advantage over the round needle, since less pressure on the tissues is needed to insert the cutting needle through the skin than the round needle, and therefore producing less trauma or bruising of the tissues. The subcuticular suture is the best technique in suturing skin when properly applied. However, unless the surgeon is particularly adept in its application, a better result is likely to be obtained by interrupted suture. Fine silk sutures, as made by the manufacturers of today (Deknatel and others), are excellent suture materials for the skin. Zytel suture material, a synthetic rayon material, has some very attractive features over that of the silk.

One should never use pinch grafts or small island grafts about the face, as the cosmetic result is never as good as that of a thick split graft, wolf graft, or pedicle graft. Great care should be exerted in the selection of the donor area for the skin used about the face. The skin of different areas of the face varies considerably as to its color, texture, and thickness.

In fractures of the mandible, any teeth which are loose with infection about them or at their roots, or teeth in the line of fracture should be extracted as soon as possible. As long as these are present the chance of bone infection and osteomyelitis is greatly increased. Also where teeth in the fracture line are removed it is less often necessary to do a counter drainage through the skin under the mandible. In fracture of the zygomatic arch, better aseptic technique may be employed or carried out through an incision in the skin of the temporal region than through the mucous membrane of the mouth, where there is always an abundance of bacteria. The deformity produced in fractures of the maxilla is a lengthening of the middle third of the face, and when the maxilla is displaced backward it causes a "dishpan" face. In a few of these cases, the maxilla will remain in its proper position after it is once replaced. If this fails it is necessary to immobilize the fractured part with an immobile part, the skull. This may be accomplished in two ways. If the zygomatic arches are not fractured, the upper maxilla may be wired to the zygoma through a small incision in the cheek, or by the use of extra-oral splints attached to a plaster head cap.

To obtain the best cosmetic scar, the postoperative care is very important; as the sutures are removed the incision should be kept supported with adhesive strappings, preferably elastic adhesives. This should be kept up as long as there is any redness in the scar line, particularly if there is some pull on the suture line. At the end of three or four weeks, if the scar has a tendency to become elevated or tissue reaction is not subsiding as rapidly as it should, a very small dose of X-ray will many times prevent a very noticeable scar or even a true keloid manifestation. In a few inci-

dents, it may be necessary to repeat the X-ray treatment.

DR. BEVERLY DOUGLAS (Nashville): The facts that Doctor Daniel has brought out, I think, indicate to all of us that this is a rather special branch of surgery and in the interests of better treatment of patients, they should be sent to a man specially qualified for their treatment whenever circumstances permit.

There are several differences in wounds of the face from wounds elsewhere. These differences occur in the main because on the face there are a number of important structures in close proximity. First, of course, we have tear ducts; second, we have salivary glands and ducts which may be cut across or exposed; third, the cartilages of the nose and of the eyelids; fourth, the facial muscles; fifth, the facial nerves. In addition, the face has many double-wall flaps such as the lips and the alae of the nose. Also the face has a supporting framework made up of thin flat bones which may be fractured, and great depression may occur from these fractures. Under the outer plates of bone are spaces or sinuses which when opened cause marked deformity and change of expression. The muscles of the face have a rather complicated co-ordination. Facial expression is seriously hampered by injuries which interfere with their function. Taken together these considerations will give us a picture of what we have to deal with when we are confronted with deep wounds on the face.

What Doctor Daniel has said about the careful cleansing and irrigation of wounds is very important, but I think he should add also that the skin edges up to the wound should be sterilized, and I suppose he meant to imply that this should be done with some common chemical antiseptic used every day in the suture of wounds elsewhere.

Powder grains, dirt, and tar can only be removed at times by scrubbing with gauze or an actual brush, and this should be done, for the scrubbing merely results in an area which is like the area from which a thin skin graft has been cut and this will heal very kindly as a rule.

The next step in the suture of facial wounds is a very important one. I show one slide to illustrate what I mean. That is orientation of the skin edges. So often we see wounds that are sewed up and we will have one-third of the wound on one side sewed to nearly two-thirds on the opposite side. This statement may be somewhat exaggerated, nevertheless a few millimeters make a great deal of difference. We should mark corresponding cross lines on the skin to match up the edges before we begin. These lines may be marked properly by noticing any little jagged indentations of the wound which fit on the other side and making them directly across such points. It is particularly important to orient and equalize the edges in the corner of the eye, on the eyebrow or lip.

Next, we must spend some time in identifying and

replacing in continuity important structures such as Stensen's duct, lachrymal ducts, and facial nerves and sewing up what muscles are torn apart where divided portions remain because they will retract much as tendons will retract in the hand.

I should like in this connection to emphasize another point just here. In the suture of a wound in layers, I am sure, Doctor Daniel intended to include the suture of deep muscular edges and the replacement of muscle where it is pulled apart and thinned out so much that it would produce a disfiguring scar.

Gillies' subtemporal muscle flap turned down into the upper cheek, which is so commonly the site of depression, will greatly aid when muscles are lost in this area.

I agree that we should unite broad skin surfaces with "right angle" contact wherever possible with as little debridement of the wound as will be compatible with "per primam" healing.

I can say only one word about the question of "rest," on which Doctor Daniel was kind enough to quote me. After the wound has been sutured, I feel that it is necessary to use light tension inward to hold the edges together during the entire period of fibroplasia, which is not ended until approximately the end of the second week.

To accomplish this we advocate the use of homemade Logan metal bows, one of which I have here. Standard Logan bows on harelips are widely used after operation to hold the wound edges together and prevent pulling apart by muscle action. The ones we employ to span the wound edges are smaller and are made of aluminum by bending strips of this material to a similar shape. Adhesive attached to each end of the bow and strapped on the skin on each side will hold the edges together indefinitely without tension.

Slide 2 shows the result of "orientation" of the skin flaps in an extensive gunshot wound of the face. Opposite "fixed points" were matched and marked before suture.

The next slide shows a man who had a shotgun wound of the face with very great depression from separation of muscles. The latter were carefully identified and resutured several years after the original wound. A muscle flap was rotated from the temporal region to restore the contour of the cheek.

(Slide) This is a man I show to illustrate how a thick pedicle flap of skin and subcutaneous tissue will do a great deal for a person with an acute injury. The flap was brought down from the nasolabial angle and put into the lower lip, a large part of which had been lost. As shown, a large mucous membrane flap was brought down from the buccal mucosa to line the skin flap and form the new vermilion border.

I think the point is well taken that wherever possible we should make an external approach to lift facial bones where they have been depressed by fracture. For instance, at the inferior orbital margin, an ordinary pointed uterine hook forceps

through a minute incision made under local anesthesia will enable us to grasp the bony rim of the orbit and bring it up. In the same way, we can put an elevator in through a small nick in the temporal region within the hair line, as Doctor Daniel has indicated, go beneath the temporal fascia, and get under the zygomatic arch to raise it up.

Time will not permit discussing other deformities. I want to congratulate Doctor Daniel on his clear, concise presentation of this subject, which, I think, is very timely because facial injuries occur with such frequency. The reason for the frequent necessity for secondary operations is that so many fail to receive adequate treatment at the start. When secondary operation is indicated, it seems to me we should not wait until the patient has developed a mental complex about the way he looks, yet this occasionally happens.

DR. EDWARD T. NEWELL (Chattanooga): I feel that I can add very little to what the essayist has already said or to what has been said by the two doctors who have discussed the paper, but I do want to emphasize something Doctor Daniel omitted, and that is the very accurate and painstaking making of X-rays in some of these cases. You seldom have multiple fractures of the inferior maxilla that you do not have some involvement of the condyle or coronoid process or both. If you have a man whose face has been terribly traumatized, it is so easy to overlook a fracture in this region. It requires a special X-ray technic, not that any qualified roentgenologist cannot take the picture, but if you are not very careful in taking and interpreting your films, you can easily overlook a fracture in this region. If you do, your patient will discover it in about a week or ten days, when the swelling, pain, and discomfort have become less, and while you can correct the deformity at that time, you will have to "recoup," admit you did not discover the fracture at the time you should have discovered it, and you will have a *displeased patient*, even though you may be able later to operate successfully on it and relieve the condition.

If you do have a fracture in this particular region or high up in the neck of the inferior maxilla, you may try to approximate it, to set it, so to speak, but you will find in a great number of cases that you will have to do an open operation to maintain the approximation. Unless you have sufficient bony tissue to suture the fracture you may have to remove the head of the condyle after the method that Murphy used to do in performing his arthroplasties for ankylosed jaws.

If you have a case of multiple traumatizations of the face and have an injury in the region of the malar bone or further back over the zygomatic process, and had not seen the patient until an hour or two after the accident, unless you make very careful X-rays, you are going to get picked up again. An X-ray properly taken in this region will show on the orbit only a very slight disalignment,

and that in itself is enough to give you the hint you have a depressed fracture of the malar bone.

Unless recognized early, when the swelling subsides, your patient will show a depressed zygoma, and will have a permanent disfigurement.

I classify in our clinic all depressed malar bones as open operation. We do them all under local, or at least ninety per cent of them. As the preceding speaker said, all you have to do is to make a very small opening through the skin and take a small curved forcep, or any small hook and elevate it. It takes a good deal of pressure sometimes, *downward* with your left hand, and *upward* with your right, if you are right-handed, to elevate the bone; it is like pulling a cork out of a bottle. Be sure to put on enough pull in its performance. The small scar is negligible.

I am not one of those traumatic surgeons who wants to give to the orthodontist or the dental surgeon the privilege of setting fractures of the inferior maxilla. I believe that this work belongs in the domain of the traumatic surgeon. I do not want to take a shingle off the dentist's roof, so to speak, but if you are going to be a traumatic surgeon, you must be prepared to take care of fractures of the mandible.

You may have to obtain a few of the usual dental instruments if you want to do the work properly. You need only two or three of these instruments; the ones with which you clip the wire, and the small pliers used by dentists. These will make your work better and very much easier.

Of course, as the essayist has said, if the patient has no teeth, if he had several of them knocked out, you will have to do an open operation and wire the jaw. In the majority of cases, you will find sufficient teeth to wire "around the fracture." No anesthesia is necessary.

I agree fully with one of the speakers who said you should extract any loose teeth that happen to be in the fracture line. I do not use intradental splints and have enjoyed Doctor Daniel's splendid paper.

DR. S. R. MILLER (Knoxville): Mr. Chairman, I think this is very important, and more important now that people are not satisfied with all the results we can get; they do not want any scars left at all. That takes the work of a specialist. I am not discussing that, but sometimes in these cases we can do more than we expect to do in the beginning. One of the worst cases that I have ever had turned out to be one of the best results. The man was working near an air drum about a foot and a half or two feet in diameter and three and a half or four feet long. The air drum exploded and the edge of it hit him on the edge of the nose at the lower border of the eyebrow down through the cheeks, tore one malar bone off, loosened the other, and his nose was hanging under his chin. It was the most horrible looking sight I ever have seen in an injury of the face that was not fatal. I did not know what to do at first, but we could not get

any support from the lower eyelid area; we could not go too close over the upper eyelids, so I secured silver wire and ran a piece of it through the cheek in front of his ear and went across the face up into the edge of the scalp on the opposite side, and after I put it in and the other one placed on the other side, I brought it across this way and got the jaws held up properly and put a shot on the wires and some stitches on the lower eyelid and face, and when I saw that man a year afterwards I hardly could see a scar. The malar bone seemed all right. I expected to have to do two or three secondary operations on the man, but he made a splendid recovery and does not have more scars than the average man of his age has wrinkles about his face. That shows that sometimes by using common sense and mechanics we can accomplish more than we expected to accomplish when we started out.

Just one more point on fractures of the lower maxilla where you can get your reductions properly. You want a dressing on it, as a rule. I tried all kinds of dressings for a simple fracture of the jaw, but the man would not quit talking and always, after I got through, I could go back and get my thumb between his teeth. He was a great big, ignorant fellow. I tried all kinds of things—rawhide, leather, leather with clamps and buckles. I tried heavy ducking. I tried the material that harnessmen use. I shrunk it and hung it in the cellar wet and let it dry out with fifty pounds of weight hanging to it and I could not keep the jaw

up. Now if you will put your dressing on where you need it and will use a starch bandage it will never slip. It is worth while. Have your bandage as broad or as narrow as you want it. Some of the interns and nurses at the hospital do not know what a starch bandage is. It is made of crinoline. You wet it and put it on and when it dries it is fixed there and you cannot move it. For a dressing for an inferior maxillary fracture after you have it set right, that is all you need; oftentimes you do not need any support except this bandage, and it is the ideal dressing.

DR. R. A. DANIEL, JR. (closing): I want to thank the gentlemen for discussing the paper. I will not take up your time by trying to bring out further discussion as to the differences of opinion regarding minor points in technic. I would like to emphasize the point that these wounds are common, they are frequently seen, and in spite of the fact that we all recognize that they should go to people who are competently and specially trained in the treatment of these types of injuries, they will continue to be treated by the general practitioner and by the general surgeon because of the factor of time and because of the fact that they are quite frequent.

I would like to emphasize the point that good results can be obtained if these wounds are not considered lightly; that is, if these wounds are carefully and meticulously cleansed and sutured as they should be.

THE TREATMENT OF FRACTURES OF THE NECK OF THE FEMUR*

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About the time that Columbus discovered America, a surgeon in France, Ambroise Paré, diagnosed for the first time a fracture of the neck of the femur and instituted treatment for that fracture. Until 1904, when Royal Whitman instituted his method for fracture of the neck of the femur, there was practically no advance from Paré's time. Whitman's method became almost universal throughout the United States and also Europe. It was the most successful method that had been instituted up to that time, and it continued in vogue almost uninterruptedly in most clinics of this country and in Europe until 1932. You will all remember that the Whitman method was one of better reduction of the fracture with abduction of the limb and applying a plaster cast from the toe of the injured side with a spica around the body up to the nipple line and usually down on the other limb to the knee. That meant a very heavy plaster cast.

As you will remember, practically all fractures of the neck of the femur occur in old people and very frequently in fat, old women. You can imagine how disagreeable it was to keep the patient in the Whitman cast for three months, because it is absolutely necessary to keep these patients in bed in the cast for that length of time. This was a very unsatisfactory method of treatment, but it was the best we had for at least twenty-five years.

I remember in reading a paper before the Surgical Section of the American Medical Association in New Orleans five or six years ago, I was discussing the question of fractures and I said then that the only fracture of the body that I did not feel satisfied about treating was fracture of the neck of the femur, and in all cases of fracture of the neck of the femur I felt that none of us was doing good work, it was very unsatisfactory work, it was unsatisfac-

tory because the patient had to be confined to bed for three months, and it was six months at least to twelve months before these patients could walk around, and they then had ankylosis in many of the joints, stiffness, and much ill effect from the long confinement; in other words, treating a patient for a fracture of the neck of the femur by the Whitman method, in my opinion, was almost sentencing the patient to penal servitude on Devil's Island.

The best method for twenty-five years was the Whitman method. Doctor Campbell reported in his series of cases that the best that he could expect was a fifty per cent union. Well, if Doctor Campbell could not get more than fifty per cent union none of us need expect to get any better. The usual mortality was twenty-five per cent, and twenty-five per cent of varying results with a fibrous union. The best clinics were getting only fifty per cent—twenty-five per cent deaths and twenty-five per cent very inefficient—unsatisfactory results.

In 1925, a new era opened up in a way. Smith Peterson of Boston introduced his nail called a flange nail because it has three flanges on either side which are very sharp. He did not report his results until 1931, six years after, and during that time he had done only twenty cases, but the marvelous part about it was that, although he had done only twenty cases and all of them were big, major, open operations, he had a seventy-five per cent firm, bony union for the first time that anybody had ever had that experience in that many cases. Smith Peterson deserves the credit for this work, but there are two other men who really are responsible for most of it. Johanssen of Sweden grasped Peterson's idea quickly. Peterson's nail did not have a hole through the center, and Johanssen put a hole through the center and instead of doing a big major operation showed how they could do it under fluoroscopic control, make a very small incision through the skin and drive this nail in place. At about the same time,

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in 1932, Wescott of Roanoke, Virginia, who is evidently an expert mechanic because he does this work so beautifully, took up the work almost immediately where Peterson had left off and began to nail these pins with Peterson's nail without a guide.

Other men took up the same work: Moore with the Moore nails began a few years later to do this work; Ransoloff and his associates began using wires doing it subcutaneously. All of this work, however, would not have been effective had it not been for something else that happened in 1932, so this work began in 1932. Two X-ray men from Boston found out how to take lateral views in these cases. We took anteroposterior views and they were not giving us correct pictures. We thought we had perfect anatomical apposition and we did not have it at all, but with the work of these Boston roentgenologists they showed us how to take lateral pictures, and when we learned that we could get anatomical apposition and you must have firm fixation.

The great bugbear of all this work has been nonunion, and now we are getting from seventy-five to ninety-five per cent of union in these fractures, irrespective of where the fracture is on the neck of the femur, because we get perfect anatomical apposition and we are getting perfect internal fixation. Personally, I do not think it makes much difference whether we use the Wescott method or whether we use a Smith Peterson pin or a Moore pin or a Kirchner wire, internal fixation for fracture of the neck of the femur is here to stay because it has been effective.

I am going to show you some pictures. All of these are real cases. There is no theory about any of it, and you can judge for yourself the results.

(Slide) In my service, all of this fracture work has been carried out under my direction, but by Doctor Higginbotham, who is my first assistant, and Doctor Frere, our roentgenologist. The two work together. It makes the work quite simple. It would be very difficult if they were not working together. There is as much credit due to

the roentgenologist in following up his work as to the surgeon who is doing the actual work. This shows you the four different classes of fractures. We do not care whether we have an impacted fracture of the neck or not, we think it should be pinned; we do know that it will get well without pinning if you keep the patient in bed for three months. The same with trochanteric fractures. I never heard of one that did not unite, but who wants to stay in bed three months to make it unite when you can make it unite and be up on your feet in a short while?

(Slide) This shows you a fracture. That is an anteroposterior view. This is the lateral view. That shows perfect apposition. It is very important to get an anatomical apposition. We never did that before. We did not know what it was.

(Slide) These are the guide pins which are driven in to guide the Smith Peterson nail. That is a lateral view and shows you perfect apposition. He is going to thread the pin and drive it in. It does not make any difference the number of holes you make; it is really an advantage; circulation is improved by it.

(Slide) This shows the pin in place.

(Slide) This is where the X-ray man comes in, and we could not do this work without him. Wescott can because he is a mechanic, he is an expert, he is a real expert mechanic. A few others can, but we could not do it without the aid of the X-ray man. This is the frogging to get the position of the lateral views.

(Slide) This is the patient the next day in bed.

(Slide) This is the pin ten months afterwards, not working out at all.

(Slide) This is still later in a different view. X-rays are very deceptive. That is exactly the same picture, one with external rotation and the other with internal rotation.

(Slide) Here is the important thing. Here is an impacted fracture in perfect position. We knew she would get well if we put her in bed for three months. Did we do that? No. We put a pin in there.

(Slide) There is the pin in place.

(Slide) That shows the two views with the pin in perfect position at the head of the bone. This is the patient in bed next day. This patient had impacted fracture of the neck of the femur with perfect apposition. We nailed it despite that. This is ten months afterwards. It has worked out a little bit. It is perfectly rigid.

(Slide) This is that same patient ten months afterwards at the World's Fair. She outwalked everybody in the group.

(Slide) You see this pin has come out some. We have not taken out any pin yet. We have not had any infection in any case nor have we had any mortality.

(Slide) Remember these two cases; they are important. Here is an intertrochanteric fracture. We knew it would get well if we put him in bed. We explained that to him. "You will positively get union in three months."

He said: "The hell! I am not going to bed if I can get well without it." He would have gotten well; they never fail to get well with that kind of fracture with any form of decent treatment.

(Slide) These are the pins preparatory to putting on the Smith Peterson nail.

(Slide) There is the pin in place.

There is the man up in a wheel chair three days afterwards, smiling and happy. Let me hesitate here a minute to tell you that this man was not from this section of the country; he was from Ohio and was on his way to Florida and he wanted to go on. Within seven days he got in his car and went to Florida with that nail in position.

(Slide) This picture was sent to us three months afterwards by a surgeon and roentgenologist up in Ohio. This fellow had a big insurance policy and the insurance company would not pay him anything. The roentgenologist said: "Those fellows in Chattanooga are evidently frauds. I do not see any sign of a fracture there." Neither do we, but we sent him the picture and got a nice letter of apology from them and the man got his insurance. Three months afterwards there was no sign of any fracture at all.

(Slide) Watch this case through because this is typical of all of them. These pa-

tients may be operated on the first day or the second day or the third day; it does not make so much difference; but the sooner you operate on them the quicker they are relieved of pain and that gives them shock. The quicker you get old people out of bed the better, so we usually operate on them early. It is not necessary; you can do it in a week if there is any reason for not doing it immediately. Here you see the pins in place.

(Slide) We have both views there. It is in perfect position.

(Moving picture) We use the modified Leadbetter method in reduction. I do not care what method you use so long as you do it gently. Thorne does not use any reduction at all. He just uses slight traction with slight abduction and internal rotation. He does not flex them at all. We do not think that is absolutely infallible (the heel-palm test), for when these patients are anesthetized with novocaine spinally there is so much relaxation at times that the heel-palm test is not infallible. There is no traction here at all. It is held in position.

All this is done on the X-ray table, not in the operating room at all. It is done on the X-ray table with no measurements, no incision at all. He is driving that pin in, right downstairs on the X-ray table.

You have to have some idea of mechanics. Anybody can do this who has a surgical technic and some idea of mechanics and a good roentgenologist, if he has the patience and has seen somebody do it once or twice, but he must have a mechanical turn of mind or he cannot do it very well. Thorne has done as many as sixty of these cases without any infection and with no mortality. That is the only incision that is made, that slight incision through the skin.

There is the Smith Peterson pin. That is the handle you attach to drive it in. All this is done under fluoroscopic control. You see that slight angle. All of the progress is watched under absolute fluoroscopic control.

Of course that causes some impaction.

You see that it required just two skin sutures to close that.

That is immediately afterwards.

Some of this work is done under local anesthesia. There is the patient on the table. It shows she has not been hurt at all.

This is the second day after operation. You can see from the expression on her face that that does not hurt her any. Doctor Frere would not hurt a patient anyway.

You see how she can use that herself. We do not put any supporting bandage of any kind on it. We believe that active motion has a great deal to do with firm, bony union. We do not use any form of massage or anything—just active motion. There is the patient up in a chair the week after. She had a bronchitis and so she did not get up the next day; we had to keep her in bed a little longer. These patients get out of the hospital in a week or ten days. If they stay longer it is just because they want to stay in the hospital and have the nursing. We allow them up four weeks afterwards, let them in the chair right away, the next day if they want to get up. We let them walk without any weight in four weeks. In eight weeks we let them put some slight weight on it. After that time it depends on the X-ray how much bony union they have as to when they walk. With union they can begin to walk in six months, but that all depends on the X-ray findings. We do not have any rule except the findings of the X-ray.

Think of this patient. She is about eighty years of age and is walking around on crutches just four weeks afterwards, and is perfectly healthy.

DISCUSSION

DR. DUNCAN EVE, JR. (Nashville): Mr. President and Members: I certainly enjoyed Doctor Newell's paper and I congratulate him on his wonderful and brilliant results.

In fractures of the neck of the femur you might say the treatment has received more attention in the last five or six years than any other single bone in the body. It is a well-known fact that it is the most serious of all fractures, involving the joint. Roughly speaking, we can divide the treatment of fractures of the neck of the femur into three methods: first, by immobilization with mechanical traction, which naturally includes the Thomas splint, the Hodgins splint, and Russell traction; the second treatment is immobilization with a plaster cast, namely, the Whitman method;

the third is fixation of the fragments by some surgical procedure.

The first two methods, as Doctor Newell has brought out, have been very unsatisfactory due to the mortality being about twenty-five per cent or more, also bony union occurring in only about fifty-one per cent of the cases. Other objections to the first two methods are that the patients are confined to bed entirely too long; there is inability to mobilize the fragments; there are chest complications and stiffness of the joints.

The third method, internal fixation, is undoubtedly, in my opinion, the method of choice. It has brought the mortality down to less than half that in the former methods. Bony union occurs in the neighborhood of eighty-five per cent or above. Also we might say the trick of internal fixation is the firm fixation of the fragments, the fragments come in direct contact with each other, allowing formation of new blood supply. The advantage is what? Mainly that these old people are made free of pain immediately and they are able to be removed from bed in twenty-four to forty-eight hours after the operation. Regardless of the type of internal fixation, I think it depends entirely upon the method with which the surgeon is familiar.

I cannot help saying that regardless of all treatment in internal fixation, a lateral X-ray should be made.

I am sorry my results cannot compare with Doctor Newell's. We have had some forty-odd cases and have had a few bad results. Also I have had one or two infections, and I have had two that did not unite. Regardless of the technic, I take issue with him about the use of the fluoroscope. The X-ray plates are so much more satisfactory to make. It is impossible to make a lateral with a fluoroscope. I believe if you expose your trochanter, anyone who knows anything about anatomy can hit the neck ninety-nine times out of 100. I do not like the fluoroscope. It is like other things—too many gadgets.

As far as the wound that he makes, it is the same old story. A three-inch incision will unite as quickly as a half-inch incision.

DR. E. DUNBAR NEWELL (closing): Doctor Eve did not exactly understand. We follow it all with the fluoroscopic view, but we take eight to ten pictures while we are doing that. We quite agree that a fluoroscopic picture will not suffice. We not only use the fluoroscope, but we take pictures constantly. I showed you how we take the lateral view. About how many views do you think we take?

DOCTOR FRERE: Ten.

DOCTOR NEWELL: We take about ten pictures besides the fluoroscopic work.

This is what I want to bring home to you. If you have a mother or a sister or some dear old patient who has a fracture of the hip, do as I told a surgical meeting in Washington not long ago.

If you have a fracture of the os calcis with marked deformity, for God's sake do not treat that yourself unless you know how to treat it; a fracture of the os calcis properly treated does not give you any disability and the patient can be up almost immediately and be around at his work in thirty days. A fracture of the os calcis if improperly treated is permanently and almost completely disabling for the rest of his life. If you have a fracture of the neck of the femur, if you are not familiar with doing this work, for heaven's sake, take it to somebody who knows how to do it and you will be so happy and the patient will be so

happy too, for this reason—this is a new idea and it has come to stay. If you do not get the patients to a surgeon or a clinic that can handle it, or a hospital that can handle it, the patients are going to force you to do it because they all know about it, they are talking about it constantly, and the best thing you can do is to get familiar with your nearest clinic to take care of these cases for you. It is a form of treatment that has come to stay and it is almost inhuman to confine a fat woman to bed for three months when she can be out of bed and out of the house in ten days.

HEAD INJURIES*

RICHARD G. WATERHOUSE, M.D., Knoxville

Head injuries, however slight, are potentially neurological problems and would best be treated by a surgeon neurologically trained, but the wide distribution of such injured persons and the impossibility of transporting all or even many of them without inflicting further injury forces the responsibility for first and usually for definitive treatment directly on the nearest surgeon.

This fact makes the subject of sufficient general interest for discussion before a meeting such as this.

The surgeon treating these cases will not infrequently find the specialist, whether neurologist or neurosurgeon, indispensable to him.

Injuries about the head are of serious import in direct ratio to the intracranial damage done, to accompanying shock, and to the probability or possibility of sequelae.

The object of treatment is: (1) to preserve life; (2) to prevent sequelae.

For the intelligent diagnosis and treatment of these cases an understanding of normal and pathological intracranial physiology is necessary.

The brain is contained in an almost completely closed nonexpansile "box" and as a result, swelling, congestion, new growths, hemorrhage or any other change in the occupation of space within the cranium results immediately in pressure changes which affect the vascular and cerebrospinal fluid circulation.

Following the teachings of Kocher and Cushing on the effects of compression, the observations of Quinke on lumbar drainage of cerebrospinal fluid, and the work of Weed, McKibben, and others in 1919, showing the possibility of lowering intracranial pressure by intravenous administration of hypertonic solutions, treatment has been directed mainly at the control of intracranial pressure by such conservative means.

Clinical and experimental evidence now

accumulating seems to show that the assumptions on which treatment is based are, for brain trauma, not wholly accurate or complete. Shapiro and Jackson have pointed out that the brain swelling is not entirely edematous; not due to increased water, but to increased blood content. And while they concede that reduction of intracranial pressure by dehydration and lumbar puncture is indicated, they think we have gone as far as possible by these measures alone.

Browder and Myers found that in cases of brain trauma the behavior of the pulse, blood pressure and respiration, state of consciousness and the cerebrospinal fluid pressures in man, and that alterations in vital signs associated with changes in intracranial tension experimentally produced by an external pressure agent, or in other experiments, the application of an intraventricular pressure agent could not be explained by increased intracranial tension *per se*. And they suggest that less obvious factors consequent upon craniocerebral violence ("intramolecular derangements," "fluid imbalance," "intracellular edema," etc.) are present and probably are the prime determinants of the altered vital signs.

Throwing some light on this phase are the observations and experiments of Schnerdorf, Munslow, Crawford, and McClure on "Anoxia and Oxygen Therapy in Head Injury." They observed depression of blood oxygen of five to ten per cent in most cases and of thirty-four to forty-four per cent in some cases of head injury. They also point out that traumatic shock produces an anoxia of the stagnant type, and that morphine, paraldehyde, and barbiturates not only cause a depression of blood oxygen, but also have a direct depressant effect upon the utilization of oxygen by the brain tissues.

It has long been known by physiologists that sudden acute anoxia will produce the same effect as a blow on the head. When a miner puts his head into a cavity filled with methane gas, he drops as though knocked out by a blow. When, after breathing fresh air, he recovers, he thinks he has

*Read before the Tennessee State Medical Association, Chattanooga, April 9, 10, 11, 1940.

been knocked down and attacks anyone near him.

Haldane subjected himself to a pressure of only 320 millimeters mercury and found in a little while that he could no longer write or make observations. He insisted that the pressure be kept at a low level, but could remember nothing of it later.

In like experiments and in balloon ascensions it has been found that understanding is impaired more than sensation. The subject sees without knowing what he is looking at. Pain is dulled. Finally, each sense is lost suddenly, hearing being retained longest. A man subjected to anoxia misjudges the position of things and cannot walk straight. This incoordination is succeeded by sudden loss of power in the legs, collapse occurs, paralysis of the arms follows rapidly. The acuteness with which paralysis sets in is illustrated by the experience of two balloonists, Glaisher and Coxwell. At 29,000 feet Glaisher was completely paralyzed and Coxwell retained movement only in his head. He pulled the valve rope with his teeth, stopped the ascent, and saved their lives.

Another airman was completely paralyzed before he could place his oxygen tube in his mouth and died.

Headache and vomiting are other symptoms of anoxia.

The susceptibility of brain cells to shock-producing trauma was long ago pointed out by Crile. More recently he has experimentally shown changes in electrical potential as well as morphological changes in the brain in shock and other conditions. These changes at first are reversible—later they are permanent.

It is by no means probable that anoxia is the whole physiochemical basis of the clinical picture of cerebral trauma. But no one can compare the symptoms without realizing that anoxia plays no small part in the sequence of events.

Munro considers concussion with loss of consciousness as the primary pathology of craniocerebral injury and autopsy in such cases shows no further physical pathology.

When additional cerebral pathology occurs, contusion, laceration, increased in-

tracranial pressure from interference with the spinal fluid circulation by blood in the spinal fluid or from parenchymatous, subdural or extradural hemorrhage, the circulation to the brain is interfered with, and to all intents and purposes there is a partial or almost complete strangulation of the brain.

Brain cells, being highly specialized, are highly susceptible to damage from even temporary alteration in the normal intracellular exchange, and as a result recovery from the primary unconsciousness and trauma is prevented and the cells suffer further injury.

Treatment, therefore, is directed at the reestablishment of adequate circulation. Lowering the intracranial pressure is one method of doing this.

EXAMINATION

In a case of head injury the first requisite is to determine the presence or absence of shock.

If shock is present appropriate treatment should at once be instituted. Morphine should not be given because of its depressant action and because it obscures important signs and symptoms. Any bleeding should be controlled in the simplest manner possible—usually by pressure.

Fluids should be given intravenously, preferably about 250 cubic centimeters of blood, if available; if not, hypertonic glucose, ten per cent to fifty per cent. External heat, elevation of the feet, and other treatment for shock should be applied.

While the treatment for shock is being carried out, some idea of the depth of unconsciousness may be obtained by supra-orbital pressure; examination of the pupils and inspection for cerebrospinal fluid leaks should be made and recorded; and examination for other possible injuries such as can be done without disturbing the patient should be carried out.

A history as accurate as possible of the accident should be obtained, particularly as to whether the patient has been conscious or unconscious since the accident and especially as to the presence or absence of a lucid interval. It is also of advantage to

know the probable direction and violence of the force causing the injury.

As soon as the patient recovers from shock, examination of the head should be made for compound fractures of the skull. Insert a gloved finger into all lacerations. This is the simplest and most accurate way of determining the presence of fracture of the vault.

Fractures of the base are more frequent than fractures of the vault. Examine the nose and ears for hemorrhage or spinal fluid leak. Hemorrhage from the ear means middle fossa fracture, or rupture of the eardrum. Blood mixed with spinal fluid means middle fossa fracture. Spinal fluid from the nose means fracture involving the dura and one of the sinuses.

Examine the eye. A purplish discoloration limited by the palpebral fascia to the orbital margin with subconjunctival hemorrhage means fracture of the anterior cranial fossa.

Fracture of the posterior cranial fossa causes respiratory derangement. Often discoloration beginning at the tip of the mastoid process and following the course of the posterior auricular artery develops, due to accumulation of blood beneath the deep fascia. (Battle's sign.)

It is now necessary to determine whether or not there is an extradural hemorrhage. A lucid interval is one of the most reliable signs of extradural hemorrhage. However, the severity of the injury may have prevented a lucid interval, or the history may be too meager to disclose it.

The pupils should again be examined and the findings recorded. From the time of onset of hemorrhage the pupils go through a series of changes which give important information as to the side of the lesion and the progress of the patient. The first stage is rarely seen. On the side opposite the lesion the pupil is normal; on the side on which compression commenced the pupil is slightly contracted and reacts sluggishly to light. In the second stage, the pupil opposite the lesion is still normal; on the side of the lesion the pupil is moderately dilated, but reacts to light. In the third stage, the pupil on the opposite side is slightly dilated,

reacts to light; the pupil on the side on which compression began is widely dilated, does not react to light. In the fourth stage, both pupils are widely dilated and do not react to light. The fourth stage means advanced cerebral compression. When the pupils pass from the second to the third stage active intervention is necessary.

Search for paralysis. Does he move all four extremities? Pick up the arms and allow them to fall. Pick up the legs and allow them to fall. If one side is more flaccid, the cerebral lesion is probably on the opposite side. Test the knee jerks, the plantar, and the abdominal reflexes. The greatest brain injury is on the side of the dilated pupil, on the side opposite the absent abdominal reflex, opposite the side of paralysis and of flaccidity.

If extradural (middle meningeal) hemorrhage is strongly suspected, an X-ray should be taken which will show the shadow of the lateral sinus and the groove of the artery and its branches. If the artery or the sinus in a suspected case is crossed by a fracture line, no further evidence is needed. An exploratory operation is indicated.

If the patient is out of shock, there was no compound fracture, spinal fluid leak, or evidence of extradural hemorrhage, do a spinal puncture, measure the pressure. Collect some fluid in two test tubes if the pressure is not too low (fifty millimeters water, six millimeters mercury); if it is low, remove only enough fluid to see if it is blood (seven or eight drops).

If the spinal fluid pressure is increased and clear and the patient is unconscious or was unconscious, he has concussion with swelling of the brain. If there is a moderate amount of blood, there is contusion and swelling. If the fluid is very bloody, he has concussion, contusion, swelling, and a lacerated brain.

If the fluid pressure is low and the patient has recovered from shock, toxic dehydration must be considered.

Temperature, pulse, and blood pressure readings should be taken on all patients at regular frequent intervals and recorded. Examination of the depth of unconscious-

ness and more or less frequent neurological examinations are made to determine the course the patient is taking. The possibility of the development of a subdural hematoma must be kept in mind now and later.

Early elevation of temperature means blood in the cerebrospinal fluid or injury to the heat center and should be actively combatted by hydrotherapy.

If the patient is conscious, the integrity of the cranial nerves should be tested:

First nerve—Can he smell?

Second nerve—Vision.

Third nerve—Movements of eyes—reaction of pupils.

Fourth nerve—Movement of eyes.

Fifth nerve—"Clench your teeth"—feel the masseter muscle contract.

Sixth nerve—Movements of eyes.

Seventh nerve—"Show the teeth"—observe the contraction of the facial muscles.

Eighth nerve—Can he hear from each ear?

Ninth nerve—Can he feel the touch of a probe on the posterior third of the tongue?

Tenth nerve—Is there vocal cord paralysis?

Eleventh nerve—"Shrug your shoulders."

Twelfth nerve—"Put out your tongue."

TREATMENT

If examinations are carried out as sketched above, we should now be able to fairly accurately classify the patients, but it must be remembered that the exact point and severity of injury is seldom if ever the same in any two cases.

If there was no shock, or after recovery from shock, the patient who is still in coma is regarded as serious. He should be placed in bed with his head elevated. External heat and stimulants applied as indicated.

Fluid intake should be limited and hypertonic solutions given to reduce the intracranial tension and improve the cerebral circulation. Carefully measured fluid drainage is indicated because: (1) it reduces the intracranial pressure at least temporarily; (2) it gives valuable information: (a) as to effectiveness of the hypertonic solutions; (b) it tells whether or not bleeding has

stopped; (3) it removes blood from the cerebrospinal fluid.

If each successive tap becomes clearer of blood, bleeding has stopped. This treatment should be continued as long as lumbar puncture and clinical symptoms indicate an increased pressure (above 150 millimeters of water) and incompetent circulation.

If the pulse rate and blood pressure rise and fall together the prognosis is fairly good, the patient is holding his own. A slowing pulse and rising blood pressure indicate a dangerously damaged intracranial circulation. And though subtemporal decompression has fallen into disuse lately—and wisely in most cases—it should be seriously considered here because unless something is done, compensation will be lost. The pulse rate will become faster and faster with a continually falling blood pressure; coma will increase; the medulla will become exhausted and death ensue.

Circulatory stimulants should be used as indicated.

Some sedation is necessary, but should be used as sparingly as possible. Morphine should not be used at all.

Oxygen should be administered in all cases for reasons already set forth.

Lacerations of the scalp, after recovery from shock, should be treated by thorough debridement and suture after careful examination for underlying fracture.

Compound fractures should be operated as soon as the patient's general condition permits (within the first six hours) and all loose fragments and foreign matter removed to prevent infection.

Basal fractures are nearly always compound, but should be treated as contusions or lacerations. Efforts to lower the intracranial pressure should be dispensed with when there is a spinal fluid leak or leaks because lowering the pressure may reverse the flow and carry infection to the meninges and brain.

Depressed fractures should be elevated and loose fragments removed as soon as the general condition warrants, usually within the first few days.

Extradural hemorrhage requires operation for removal of the clot and control of

the bleeding vessel or sinus as soon as the diagnosis is made. There will be no improvement in the patient's condition until the hemorrhage is controlled.

Subdural hematoma may occur and give symptoms early, but usually symptoms appear two weeks to several months after the injury, which may have been slight. The treatment is operation, usually through one or more burr openings, at the site indicated by localizing symptoms. An osteoplastic operation should be done, if the brain fails to expand and symptoms continue after removal of the liquified portion. The lesion is very frequently bilateral.

Careful nursing is important in all these cases to prevent pulmonary complications, decubiti, etc., and to maintain restraint with minimum sedation. Careful watching is also necessary because delirium may intervene at a most unexpected time, and the patient by his movements may excite fresh hemorrhage or otherwise injure himself.

SEQUELAE

The sequelae of head injuries are many. Some are inherent in the extent of the injury itself; some are the result of necessary treatment; some of infection. Many may be avoided by prolonged rest. Seven to ten days in bed for simple concussion, followed by gradually increasing activity. Relatively longer periods of rest and convalescence for contusion, laceration, and operative cases. Roughly the duration of unconsciousness plus the length of the period of retrograde and subsequent amnesia are guides to the amount of functional brain damage, and hence to the proper convalescent care.

CONCLUSION

The problem of craniocerebral injuries is still in a fluid state. No definite rules can be put down for the management of the individual case. An attempt has been made to present the experiences and clinical facts which have been some help as a guide in handling these cases.

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DISCUSSION

DR. W. de GUTIERREZ-MAHONEY (Nashville): Mr. Chairman and Gentlemen: The subject of head injuries is extremely broad in its circumference, and Doctor Waterhouse has already encompassed it practically as fully and as completely as anyone could. It leaves really very little for discussion, but the loophole that one might seize upon is the pathology of concussion. I shall make an effort to show you a few of the manifestations of the pathology of cerebral injury, a pathology that is so fine that usually one does not see it in the gross at post mortem and which has, on the whole, been overlooked because of its minuteness.

(Slide) This is the brain of a man who died within a couple of days following a severe head injury. It does not show the usual extreme laceration which so many of these patients who die very early in their course of head injury have, but it does show a number of small hemorrhages throughout both the white matter and the gray matter, the cortex as well as the corpus callosum.

The microscopic evidences of damage in some of these patients are shown here in the brain stem as minute hemorrhages at the level of the trochlear nerve, but these hemorrhages may extend anywhere through the whole length of the brain stem and are usually not demonstrable except microscopically. More careful study shows these to be ring hemorrhages with an area of dilatation about the blood vessels as well as a clumping within the blood vessels themselves.

(Slide) This will show you in a fat stain (Herxheimer) what happens to some of these blood vessels. This area which is darker than the rest is one of these small blood vessels which is filled up with fat, and we have here the experience of fat embolus, which is one of the agents which causes the anoxia to which Doctor Waterhouse has referred.

(Slide) Another manifestation which also is demonstrable only histologically is that of loss of myelin in some of the long connecting fibers of the brain and is something which is splotchy without any relation at all to the distribution of blood vessels. It is probably due to the molecular derange-

ment which takes place unquestionably at the time of the injury.

Here again is one further demonstration of the edematous effect of some of these injuries. This Swiss cheese pattern which you see here is usually interpreted as edema, although, as Doctor Waterhouse brought out, one cannot weigh any more water in some of these brains than in a normal brain.

(Slide) Further evidence of molecular disorganization that goes on here, and, to my mind, part of the explanation for the clinical picture of concussion, is the change which goes on within the nerve cells of the brain. These are nerve cells of the brain stained with a fat stain and show minute deposits of granular bits of fat within the cells themselves which normally do not exist there. These are in areas which are quite distant from any large foci of trauma, and they are found, as I say, in those brains in which the damage is studied with microscopic examination.

(Slide) This is a Nissl stain of the same type of cells, which shows the disorganization of the nucleus, and at times also elongation of the dendritic processes.

These are simply pathological pictures to give us an idea of what is the underlying mechanism of some of these effects. These, as I say, are pictures from a patient who died within two or three days following severe head injury. Many of these patients, of course, live, and if we were to follow the pathology of these patients in the course of time, naturally the reparative process goes on to scar formation and as the result of scar formation we find epilepsy and other derangements due to focal lesions. But in addition to focal lesions we also have the evidence of loss of substance; that is, if we have a certain amount of substance in a given brain and so many of these fibers which conduct impressions are transected, we have a subtraction of these normally functioning cells by the process

of division of these fibers as well as by damage to the nerve cells themselves, and a person who has a certain amount of subtraction of substance from his brain naturally hasn't as much brain to carry on the day's work as you and I have. The result of that is that so many of these patients are considered to be neurotic because they are not able to react to their environment, but if one studies their brains histologically, or, if before that time one does air injections, and with the help of the pattern shown after air injection measures the amount of brain which is left, one finds a good deal less substance there than normally would be.

This very brief presentation of the pathological pictures will simply give you an idea upon what we are to base the practical aspects of the matter of head injury which Doctor Waterhouse has taken up so very fully; the less practical aspect in a way is the pathology, although it is the basis on which our practical management does depend.

DR. R. G. WATERHOUSE (closing): I appreciate very much Doctor Mahoney's bringing out the pathological changes in concussion. He has had the advantage of doing a great deal of work with Doctor Cushing and of doing work in Vanderbilt University in his laboratory where he can carry on work that is so much needed in that part of the investigation.

There is only one thing that I would like to emphasize; that is, that these patients are emergencies, that they demand treatment, that something can be done for them, that it is not enough to put them to bed and wait to see if they are going to improve.

I would also like to stress the fact that the brain is suffering from a lack of oxygen, and if you cannot do anything else you may help these patients by the administration of oxygen while they are overcoming the primary effects of their injuries.

TREATMENT OF INJURIES OF THE CHEST*

DUANE CARR, M.D.,† Memphis

Injuries of the chest usually occur with dramatic suddenness. The horrified witness calls a doctor or ambulance in a state of frenzied excitement. The patient is found in an atmosphere of hysteria and confusion, and is usually in a state of shock which requires quick action. Under these circumstances a working knowledge of the physiology of respiration and ability to restore normal physiological function promptly are essential to the first physician to see the case, and upon him will depend the ultimate result of treatment.

Three common types of chest injury will be considered here: penetrating wounds of the chest wall and lungs, penetrating wounds of the heart and crushing injuries sustained in automobile accidents, falls or from falling objects. The treatment of each type of injury consists mainly of a restoration and maintenance of normal function, and a brief review of some fundamental physiological facts will rationalize the essential measures to be used.

PENETRATING WOUNDS OF CHEST WALL AND LUNGS

Penetrating wounds of the chest are commonly seen in civil life. In the four years, 1935 through 1938, there were admitted to the John Gaston Hospital 178 stab and gunshot wounds of the thorax which definitely penetrated the lungs. Accepted criteria for damage to a lung are: (1) extensive subcutaneous emphysema, (2) expectoration of blood following injury, (3) X-ray evidence of blood or fluid in the pleural cavity, or (4) pneumothorax.

The primary observation to be made in regard to a penetrating wound is whether or not it is sucking air. If the wound is sucking air, the first step in treatment is to *close it* with whatever means are available: adhesive tape, skin clips, sutures, or with gauze pack. The open wound itself

creates a state of shock due to disturbed respiratory physiology which is out of proportion to the amount of blood lost or the extent of tissue damage. The lung is a naturally contractile organ held in a state of expansion only because it is enveloped by the air-tight pleural sac. When air enters the pleural cavity at atmospheric pressure, the lung collapses. The mediastinum is drawn toward the intact hemithorax because of the negative pressure on that side. The flexible mediastinum swings to and fro with the phases of respiration, making impossible the complete expansion of the intact lung and decreasing its effectiveness. There is likewise an exchange between the two lungs of air which becomes more and more devoid of oxygen and laden with carbon dioxide. Immediate closure of the open wound will stabilize the mediastinum and permit the intact lung to maintain life while the usual measures to combat shock are being instituted.

Immediate aspiration of blood or air from the pleural cavity after closure of any existing open wound is indicated only if there is marked respiratory difficulty and shift of the mediastinum. A partial collapse of the lung for forty-eight hours is desirable for the control of hemorrhage, and usually bleeding from the lung will cease spontaneously because the circulatory pressure of the pulmonary vessels is only one-sixth that of the peripheral circulation. However, beginning forty-eight hours after the injury, when the danger of bleeding is past, daily aspirations of moderate amounts of blood, effusion and air are necessary until the pleural cavity is dry and the lung largely expanded. Blood or bloody serum in contact with the pleura causes it to thicken rapidly and may well prevent ultimate re-expansion of the lung if left in the pleural cavity over a long period of time. In our series, empyema occurred only in those cases in which the pleural cavity was not adequately aspirated.

Operative interference is indicated only if there is evidence of continued internal

*Read before the Tennessee State Medical Association, Chattanooga, April 9, 10, 11, 1940.

†From the Department of Surgery, University of Tennessee, College of Medicine.

bleeding, when an injured intercostal or internal mammary vessel will usually be found and may be ligated. In one instance a lobectomy was performed, removing a lower lobe macerated by a shotgun charge at close range. The patient survived.

The routine which has been followed at the John Gaston Hospital and which has reduced the mortality rate of penetrating wounds of the chest wall and lungs, including complications, to 8.3 per cent is as follows: (1) immediate closure of all "sucking" wounds, (2) administration of sedatives or stimulants as required, (3) routine treatment for shock instituted upon arrival upon the ward, (4) immediate aspiration only if there is marked respiratory embarrassment and shift of the mediastinum, (5) surgical intervention only if there is evidence of continued bleeding from the systemic circulation, and (6) daily aspirations of 500 cubic centimeters of blood, effusion or air beginning forty-eight hours after the injury and continued until the pleural cavity is dry and the lung approximately expanded. On the third day of normal temperature the patient is discharged from the hospital.

PENETRATING WOUNDS OF THE HEART

Most dramatic of the chest injuries is the penetrating wound of the heart. If the patient lives to reach the hospital, it seems that he has an excellent chance of recovery if the condition is recognized and promptly treated. The patient is in profound shock characterized by a gray cyanosis, a faint or imperceptible pulse, and a very narrow pulse pressure. The blood pressure usually ranges from seventy fifty to ninety seventy. The pulse rate is not so fast as one would anticipate considering the degree of shock, usually ranging from 100 to 110. Heart sounds are usually muffled, distant, or imperceptible. A marked distention of the veins of the neck is evidence of cardiac tamponade with back pressure in the venous circulation. The diagnosis of a penetrating wound of the heart with tamponade is most certainly confirmed by fluoroscopic observation of the pericardium which is not greatly enlarged, but which apparently

stands still. Little, if any, motion can be observed throughout the cycle of the heart beat. The diagnosis can be further confirmed and temporary relief obtained by aspiration of the pericardial cavity.

Antishock measures are instituted immediately when the patient enters the hospital and continued in the fluoroscopic room to which the patient is immediately sent. Unless the patient shows marked improvement under this routine while the diagnosis is being made and confirmed, he is sent directly from the fluoroscopic room to the operating room. An extrapleural approach to the pericardium is usually made, without anesthesia, by resecting or cutting and reflecting the third and fourth costicartilages on the left. General anesthesia is begun as the tense, blue pericardium is exposed, opened, and all blood and blood clots swept from the pericardial sac. Immediately the patient's blood pressure rises to normal and the wound in the myocardium or in one of the great vessels begins to bleed vigorously. With a finger controlling the bleeding, a suture is passed beneath it and tension applied upon it to close the wound sufficiently to permit a more deliberate repair with a double row of fine interrupted silk sutures. In our series we have found it important to establish drainage between the pleural and pericardial cavities to permit the escape of serum from the pericardial sac, which can easily be aspirated from the pleural cavity. Following this the pericardium is closed tightly and the chest wall repaired *without* external drainage.

Seventeen patients with penetrating wounds of the heart or intrapericardial vessels with tamponade have reached the John Gaston Hospital alive in the past five years. Thirteen of these patients were operated upon with eleven recoveries. Of the four not operated upon, two recovered spontaneously, showing sufficient improvement under the initial antishock treatment to indicate conservative treatment. One patient died on reaching the receiving ward and in the last patient the condition was unrecognized until autopsy. The total survival rate is seventy-six per cent.

CRUSHING INJURIES OF THE CHEST

Crushing injuries of the chest usually occur as the result of an automobile accident in which the patient is thrown against the steering wheel, instrument panel, or back of the front seat with violence. Occasionally such injuries occur as the result of a fall from a height or more rarely from being caught beneath a falling object. From blows received directly on the sternum, there is frequently contusion of the myocardium which may or may not produce hemorrhage in the myocardium itself. The ribs ordinarily fracture either in the mid-axillary line, or in both the anterior and posterior axillary lines, as they are bent inward beyond their limits of flexibility. This frequently causes a puncture of the lung with a spontaneous pneumothorax without evidence of an external wound. When many ribs are crushed, the chest wall is flexible, giving rise to a paradoxical motion of the chest wall which is drawn inward on inspiration and blown outward on expiration.

Treatment of contusion of the myocardium consists largely of physiologic rest *without* the use of digitalis, which may be extremely detrimental in such cases. Besides keeping the body at rest, oxygen is freely used to lessen the load placed upon the damaged heart.

Spontaneous pneumothorax must always be recognized and treated early. Repeated aspirations of air as frequently as every thirty minutes may be necessary should a bronchopleural fistula remain open, allowing complete collapse of the lung and diminution of the patient's vital capacity to a dangerous level. It is occasionally justifiable to insert a catheter between the ribs and to connect this with a water trap to permit the free egress of air for a period of twenty-four to forty-eight hours. Keeping the catheter in position longer than this is not advisable because of the danger of introducing infection into the pleural cavity.

The emergency treatment of a crushed chest with paradoxical motion is to *stabilize the chest wall* even though it is necessary to maintain it in the collapsed position. Paradoxical motion of the damaged chest

wall permits a similar paradoxical motion of the mediastinum which decreases the effectiveness of the opposite lung. Once the chest wall is stabilized with pads and adhesive tape, normal physiology is at least partially restored. This can be further restored when any spontaneous pneumothorax is aspirated.

Two serious complications are common to patients with crushing injuries of the chest. The first is pneumonia which is caused by retention of secretions in the bronchial tree, due to shallow respirations preferred by the patient to whom deep breathing is painful. It is a temptation to give enough sedative to these patients for the relief of pain, forgetting that opiates paralyze ciliary action and suppress the cough reflex to a point almost certain to produce stasis of secretions followed by pneumonia. The amount of sedative to give such a patient requires careful judgment and consideration. When possible the patient's position must be changed frequently. In all cases it is necessary that the patient evacuate secretions by voluntary coughing in spite of pain or that the physician evacuate the secretions by suction with an intratrachea catheter, or that bronchoscopic drainage be performed.

The second complication frequently encountered is paralytic ileus which may appear within twenty-four hours or may be delayed for a week following the injury. The patient will go into shock unexpectedly or may complain only of extreme shortness of breath and exhibit a gray cyanosis with cold, clammy perspiration. Peristalsis is diminished or absent. The abdomen need not be greatly distended, but percussion or an X-ray film will show tremendous dilatation of the stomach and intestine, and a Wangensteen applied promptly will evacuate a few hundred cubic centimeters to a litre or two of gas and black water. Pitresin every two or three hours in conjunction with the Wangensteen will help restore peristalsis and normal activity of the gastrointestinal tract. Evacuation of the colon with enemas and a rectal tube and heat is likewise important.

SUMMARY

Three types of injury of the chest have been described. Each constitutes an emergency because of the disturbance of the normal physiology of respiration and circulation. A prompt recognition of the type and extent of injury, and the immediate application of certain measures to restore normal physiology, will result in recovery of a vast majority of these patients.

DISCUSSION

DR. M. B. DAVIS (Nashville): Mr. President and Gentlemen: I am not going to discuss this masterful presentation of Doctor Carr's, but with his permission and with, I hope, your indulgence, I am going to report a case of successful suture of a stab wound of the heart as an adjunct to his paper.

Fortunate is the surgeon who has the opportunity to operate on a wound of the heart, and doubly fortunate is the patient on whom this operation can be performed, for a high percentage of these cases are beyond human aid when they fall into the hands of the surgeon.

Hospital No. 73422.—P. H., white male, age twenty-nine, was admitted to the Nashville General Hospital, October 3, 1939, with a history of thirty minutes before admission of having been stabbed with a knife in the left chest, in the sixth interspace near the nipple line. He was disorientated, was apparently in no pain, and would continually repeat "I am dying." There was cyanosis of his face and neck, with marked engorgement of the neck veins. His blood pressure was systolic 42,

diastolic ? His cardiac area of dullness was apparently increased; his heart sounds were audible, but faint; radial pulse was palpable, but weak in volume.

(I Slide) Under novocaine-adrenaline anesthesia, the costal cartilages of the left third, fourth, and fifth ribs near the sternum were resected, and a flap turned outward. A hole was torn in the parietal pleura, as it was stripped from the flap. This was packed temporarily. The pericardium was black in color and very tense; the heart pulsations were very faint. Due to poor exposure, gas anesthesia (nitrous oxide) was given, and part of the sternum was rongeured away.

On opening the pericardium, a large amount of clotted blood was evacuated, the heart began to beat more forcefully, and a wound was seen in the right auricle, about one centimeter in length, from which blood squirted with each diastole. This was controlled with finger pressure. A silk traction stitch was taken in the tip of the ventricle and the heart rotated down and outward. At this time the heart ceased to pulsate, but on massage it quickly started again.

The wound in the auricle was closed satisfactorily with three black silk sutures. My assistant, in trying to facilitate the wound closure, grabbed the auricle with an Allis clamp. In releasing this, two more small holes in the auricle had to be closed.

Intravenous saline and adrenaline were given at this time. The pericardium was sutured loosely

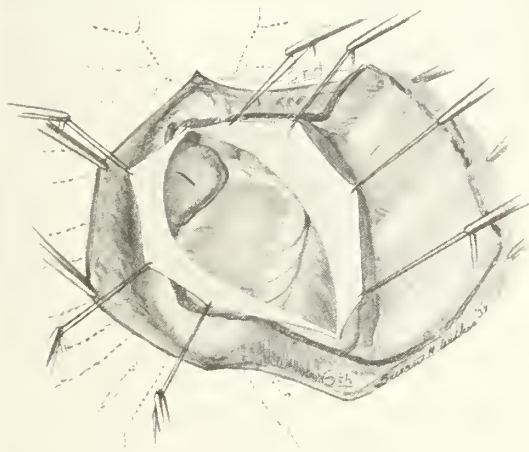


Fig. 1—Operative field, showing part of sternum rongeured, flap composed of 3-4-5 costal cartilages and wound in right auricle.



Fig. 2—Taken six weeks after operation, showing type of skin incision.

with four interrupted silk stitches; the wound of the pleura was closed; and the chest wall was repaired.

(II Slide) The patient was transfused and then placed in an oxygen tent for four days. He was kept well under the influence of narcotics. His convalescence was uneventful except for a left-sided pleuritic effusion which necessitated a number of aspirations and a slight skin infection in his wound.

His cardiogram, run six weeks after his operation, showed no alteration. His blood pressure and pulse were normal.

(III Slide) Four months from the time of his heart wound, he resumed his work of truck driving and shows no evidence of cardiac insufficiency.

DR. HERBERT ACUFF (Knoxville): Mr. President and Members of the State Association: I want to take this opportunity to congratulate Doctor Carr on the splendid presentation he has made. I know something of Doctor Carr's work, I know something of his training, and I know the work he does is most excellent and the results he has obtained have been genuinely sincere.

To those of us who are interested in thoracic surgery there are just three or four problems that come constantly and with which we have to deal almost daily. I want to discuss for just a moment the most ordinary of those, namely, fracture of the ribs. Fractures of the ribs come to us all. Unfortunately they are not always noted by the man who sees them first, because you cannot feel them. Fractures of the ribs, because of the way in which the chest and thoracic cage are constructed, many times are not seen where we expect them to be seen. It is the rarest thing to see a fracture of the rib above the fourth, and it is the rarest thing to see one below the eighth or ninth. We all see them, but it is rare. Most of them occur between the fourth and the eighth or ninth ribs, and they occur mostly after the age of forty years, for the reason that the animal matter in the bone disappears after that time, the flexibility is much less, the bone is much more easily fractured than previous to that time.

In fractures of that type, if the missile or object striking the chest is a large one, if there is a large contusion as from falling over some large object or what-not, you will usually find that the chest itself has more of a compression injury than it has fracture of the ribs. However, in that type of fracture most usually the ends of the ribs fractured will spring out, fly out, and before you see the patient they have returned to the normal position. If the missile striking the chest is one of smaller size you will usually see the internal type of flying, if you will, where the two ends of the ribs are driven in and through the pleura, many times giving a spontaneous pneumothorax, but by the time you have seen that patient they are back in position. The flexibility, the curvilinear con-

struction of the rib itself, will oftentimes cause it to return to its normal position before the surgeon has had an opportunity to see it.

The complications of these fractured ribs are the things that interest us more than the ribs themselves. If it is extensive enough to cause a pneumothorax, if it is extensive enough to cause a hemothorax by rupturing the branches of the internal mammary or the intercostal vessels, those are the things which would give us concern rather than the break in the continuity of the bone structure itself. However, the first thing to do is ascertain whether or not you are dealing with a hemorrhage. If no hemorrhage, then the thing to do is to put the patient at rest. How do you put the patient at rest? It is not sufficient just to put a small adhesive strap around the site of this injury, but that affected chest should be splinted to the good chest or the contralateral chest. In other words, the adhesive dressing should go all the way around the body, being careful not to make too much of a compression, of course, but being sure that you are splinting well the affected side against the sound side.

The penetrating wounds of the chest to which Doctor Carr referred always give us a great deal of concern. They are of two types really. One is the type of gunshot wound, the other is the type of stab wound. We see them both. They both penetrate, some deeper and some more shallow. I think it is always advisable in penetrating wounds of the chest to try to find out where the missile is. If it is a gunshot wound with no wound of exit, an X-ray ought to help you determine where the missile lies. If it lies low in the abdomen, then a further X-ray should be made, showing whether or not the missile has penetrated the abdominal wall.

Daudy, at Johns Hopkins some years ago, gave us a very good procedure for determining whether or not a wound has penetrated an abdominal viscus, inasmuch as he X-rays the lower abdomen; if there is air between the diaphragm and the liver it is almost axiomatic that the missile has penetrated the stomach or one of the intestines, allowing the escape of air. In that event, of course, an abdominal exploratory operation should be immediately performed. If that is not true, if it is only in the chest wall, then of course the fixation with rest and expectancy should be the line of treatment.

Sucking wounds of the chest. Since I returned from the Army in 1919, I believe that I have seen less than two dozen sucking wounds of the chest. I don't know what the experience of Doctor Carr has been, but in the Army it was usual to have those wounds coming back from the front. It was so ordinary that the orderly would lay the wounded men on your table and say: "This is a sucking wound," or "This is not a sucking wound." I have seen those sucking wounds come back from the front with every sort of fixation dressing to the chest, and, as Doctor Carr said, you want to stop that air with anything that you possibly can. The

first thing, of course, is some sort of adhesive dressing, if you can do it, until you can get him where you can stitch the wound, either by skin clips, stitches, adhesive plaster with dressing, or, if nothing else, put a wet or moist cloth across it, but stop the air from its inrush into the pleural cavity. Atmospheric pressure, as you know, fourteen pounds to the square inch, with any sort of opening in the chest will rush in there and give a dangerous situation, because it causes a shifting of the mediastinum and in less time than it takes to talk about it the shifting of the mediastinum will bring about a syncope and an immediate hemorrhage.

The other thing which I want to lay emphasis on is the compression wound of the chest. That is the one thing we see here at this time that is an innovation. Compression wounds of the chest, which we see more than any others, give a great deal of trouble. Men doing thoracic surgery are seeing those compression wounds of the chest, and it is not the wound of the chest, but the shock that is attendant thereto that causes the trouble. Most of the time the thoracic cage, having a prominent vertebral column pushing forward, gives you more or less of a recessed cavity on each side and the lung can be taken care of, but counteracting that is the weakness of the vessel walls, the thinness of the amount of muscle that is in the musculature of the artery and veins on the inside, and that, of course, is the thing that causes the rupture quicker, drains the heart, drains the cavity because of its proximity, drains the blood from the skull and from all parts of the vessels, brings about anoxia, and, of course, increases concurrently the carbon mon-

oxide increase in alveolar tension, decreases the oxygen tension, and when that drops below forty you know what happens—disastrous results follow immediately when the alveolar tension drops below forty because then it is that seventy or eighty per cent of our oxygen carrying power has been dissipated and no longer can the patient survive when you go below as much as seventy-five per cent of oxygen carrying power in the blood content itself.

DR. DUANE M. CARR (closing): I would like to thank both Doctor Davis and Doctor Acuff for their kindly discussion and for the information in addition to that which I tried to contribute in my rather brief paper.

Doctor Davis is to be congratulated on this particular successful suturing of a heart wound, as a stab wound of the auricle is one of the most difficult to close, both because of its position, necessitating in his case the resection of part of the sternum, and also because of the extremely thin and friable nature of the musculature of the auricle itself, as illustrated by the experience of his assistant when he used an Allis forceps on it and tore a hole in it. I congratulate you, Doctor Davis.

I want to thank Doctor Acuff particularly for his continuation of the discussion of fractures of the ribs, and I believe he brought out a most important point when he mentioned the proper strapping of a chest, anchoring the tape well across the midline both front and back. Adhesive tape applied to a chest gives no support unless it is brought across the midline, both front and back.

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H. H. SHOULDERS, M.D., Editor and Secretary

NOVEMBER, 1940

THE ISSUE

SHALL PATIENTS AND DOCTORS RETAIN THEIR FREEDOM OF JUDGMENT IN THE MATTER OF MEDICAL CARE, OR SHALL THIS FREEDOM BE SURRENDERED TO SOME GOVERNMENTAL AGENCY?

EDITORIAL

HOSPITAL SERVICE PLANS AND MEDICAL SERVICE PLANS

It is common knowledge that several different hospital service plans are in operation in various localities in the United States. It is common knowledge that several different medical service plans are in operation in the United States. It is common knowledge also that there is a disposition on the part of some people interested in hospital service plans to attach to their hospital service contracts a rider providing for medical service also. It is, therefore, very essential that doctors develop and maintain a very clear understanding of this situation in order to be in position to support the proper type of plan, or enabling act, as the case may be, and to oppose intelligently the adoption of any enabling act, or plan, with provisions which are dangerous.

Hospital service plans appear in various forms. Some insurance companies sell a

health and accident contract in which is included a hospital benefit also.

In another instance a hospital service contract is sold by a certain hospital or group of hospitals. In still other instances a corporation is organized under an enabling act, passed by the legislature, which is authorized to sell a hospital service contract.

The benefit provisions in these various contracts vary. In one instance it is provided that a certain sum of money is turned over to the beneficiary each week with which he will pay for hospital services received. In other instances, the benefit is in the form of service only. That is to say, the hospital will give the beneficiary a certain number of days of hospitalization, together with a certain amount of laboratory service and X-ray service, etc. The beneficiary never sees any money.

We doctors have favored the proper sort of hospital service plan, but we *have insisted that all contracts for hospital service should embrace hospital service only.* This service, of course, may include such laboratory services as are usually included in hospital service.

We insist that a medical service contract should be separate from any hospital contract. One of the dangers which lie out in front of us and against which we must protect not only the medical profession, but people who buy the contract is this: An enabling act may be presented to the legislature in which it is provided that a hospital service plan may include medical service as well as hospital service. Under such a provision a corporation could be formed with the power to sell complete hospital and medical service under the same contract. One or two hospitals might create a situation which would enable them to sell a combined hospital and medical service contract.

It is obvious that such a situation would lead to the subjugation of doctors to the same extent the contract is effective in a community. For example, if a hospital should sell to a group of people a contract providing for hospital benefits and medical service benefits up to a certain limit, the

corporation selling the contract would be in complete charge of the administration of both the benefits. In such a case the doctor becomes an employee of the corporation instead of the patient. The doctor-patient relationship is lost.

There has been a disposition on the part of some of the promoters and administrators of hospital service plans to include various forms of medical service in their hospital plans in order to make them more attractive and saleable.

It is very necessary that we observe the operation of various hospital service plans and medical service plans over the country. By the process of trial and error a satisfactory contract should be evolved and prove beneficial to all concerned. However, it is becoming increasingly apparent that the medical profession had better be eternally vigilant in preserving that freedom of relationship between doctor and patient for which we have contended so earnestly for so long else that freedom of relationship may become involved and even lost in a hospital service contract with a medical service rider.

MEDICAL PREPAREDNESS AND THE PRESERVATION OF FREEDOM!

The medical profession of the United States is in hearty sympathy with the movement to create a state of military preparedness in the United States.

Doctors are mobilizing themselves for various services on a voluntary basis. Every local draft board in the United States must have a doctor as a member. Doctors must serve on appeal boards. Doctors must serve on induction boards. Doctors must serve in the camps and cantonments, not only in practicing preventive medicine, but in rendering services to sick and injured soldiers.

The tasks of doctors loom larger. We are motivated by a desire to preserve freedom in these United States. We are not thinking alone of the freedom of doctors and patients in their relationship to each other. We are thinking of the freedom of all. We must bear in mind, however, that the freedom of both doctors and patients

can be lost by actions taken in the name of military preparedness. Health department functions could be broadened to embrace medical care. Such action could be based upon the contention that it is necessary for military preparedness. By such a step a communistic form of medical practice could be established and in the name of a worthy cause.

It must not be forgotten that soldiers in camps are in even more urgent need of public health services than people in their homes, for the simple reason that the dissemination of transmissible diseases occurs with much greater rapidity in thickly populated areas, such as military camps, than in rural areas where people are not so crowded.

It is our firm belief that all these medical military problems can be met efficiently without creating any disturbances such as would grow out of the extension of the activities of health departments beyond their proper scope. —————

AID TO THE BRITISH

On another page of this issue of the JOURNAL, under News Notes and Comments, will be found a brief statement of a worthy activity carried on with the idea of supplying the British with needed instruments and supplies to enable doctors to render more adequate service to the injured in their land.

This certainly is a worthy cause. It can be aided a great deal at little or no sacrifice.

DEATHS

DR. T. H. WOODS

Dr. T. H. Woods, Bell Buckle; University of Nashville, Medical Department, 1886; died October 18, 1940.

RESOLUTIONS

RESOLUTION OF RESPECT

The Anderson County Medical Society has lost a valuable member in the passing of Dr. J. T. Hayes of Oliver Springs, Tennessee, June 28, 1940. Doctor Hayes had

been a practicing physician for forty-two years. He was a native of Smithville, Tennessee, and a graduate of Vanderbilt. He had been in active practice in Oliver Springs for the past thirty-five years. He was one of the most faithful members of the Anderson County Medical Society, always ready to further its interest in every way possible, having served as its president at different times.

Doctor Hayes was a typical Christian gentleman, beloved by everyone who was privileged to know him. A beloved physician has gone to his reward.

Therefore Be It Resolved, That we have lost in him a true and valued friend.

Be It Further Resolved, That we extend to his bereaved wife our sympathy.

Be It Further Resolved, That a copy of this resolution be spread upon the minutes, a copy sent to the wife of the deceased, and a copy to the State Society.

J. M. COX, M.D.,

HERMAN E. HEACKER, M.D.,

J. S. HALL, M.D.

Committee.

RESOLUTION AND TRIBUTE TO DR. A. F. RICHARDS

In the passing of Dr. A. F. Richards the Five-County Medical Society has lost one of its most enthusiastic members. Doctor Richards was a man of more than ordinary attainments. He was a man that to know was to love. He filled many important positions in the medical profession. He was connected with the State Health Department for a number of years. He had been president of the Tennessee State Medical Society, the Upper Cumberland Medical Society, and the Five-County Medical Society. Doctor Richards was a Christian gentleman. He was a man who devoted his life to the relief of suffering humanity. To know Doctor Richards was to love him. His friends were numbered by the number of his acquaintances. In the passing of Doctor Richards the Five-County Medical Society and the state-at-large has lost one of its most cherished members.

Be It Resolved, That a copy of these resolutions be spread upon the minutes of the Five-County Medical Society, a copy be sent to the STATE MEDICAL JOURNAL, and a copy be sent to his bereaved family.

(Signed) C. E. REEVES, M.D.

V. L. LEWIS, M.D.

V. O. BUTTRAM, M.D.

NEWS NOTES AND COMMENTS

AN APPEAL FOR CHINA

The Women's Hospital, connected with the West China Union University, Chengtu, was completely destroyed in a fire which followed a Japanese air raid in August. The hospital, which is the property of the Methodist Church, was conducted by Dr. S. H. Liljestrand (Syracuse, 1915). The doctor reports "the fire which destroyed the Women's Hospital destroyed all of my cystoscopic and electrotherapeutic apparatus and the accessories of a general gynecological clinic. Fortunately, I had loaned a cystoscope to the Men's Hospital a block away. Also the radium was saved, being in a patient that night. The patient was ambulatory. She went to a Chinese hotel because of the fire. In the morning her honorable husband informed us of her whereabouts and the radium was recovered. I still have only fifty milligrams, but that is a mighty help.

"The fire also destroyed our medical periodicals, including those on urology, surgery, gynecology, and obstetrics.

"I would be very glad if we could get secondhand apparatus and used copies of medical magazines. There continues to be great demand for our services in this war-torn section of China."

If you are interested in assisting Doctor Liljestrand with used but conditioned material, please communicate with the Medical Department, Board of Foreign Missions, Methodist Church, 150 Fifth Avenue, New York City.

Dr. Milton Tharp resumes the general practice of medicine with offices at 2108 Eighth Avenue, South, Nashville.



Left to right: Mrs. Pringle Rhett, Mrs. Robert Webster, Mr. Dan Maddox, Mrs. John Fenner Cummins, and Mrs. Newman Cheek, all officials of Bundles for Britain, Inc., Noel Hotel, inspect a group of more than 700 surgical instruments contributed by Nashville physicians to the organization for use during the bombing raid emergencies in England.

On October 1 the Nashville Academy of Medicine and Davidson County Medical Society voted to assist the Nashville organization of "Bundles for Britain" in their effort in collecting surgical equipment to be sent to England. The situation has become acute because numerous first-aid stations have become essential. Due to the scattered and widespread bombing the isles are receiving, first-aid care has necessarily had to be decentralized. The local physicians, dentists, hospitals, and medical supply houses cooperated, and on October 9 more than 700 instruments were sent to England.

"Bundles for Britain" have asked that an appeal be made through the columns of the JOURNAL to physicians and individuals connected with medicine to give their instruments to this worthy cause. Anything that might be used to stop hemorrhage or in the treatment of injured people is requested, although the specific instrument might be old or in need of repair. Your support to

England might keep us out of war by assisting her to a victory. Massey Surgical Supply Company will pick up instruments in Middle Tennessee. If there is no organization of "Bundles for Britain" in your city, write Mrs. John Fenner Cummins, 412 Fairfax Avenue, Nashville, Tennessee, and the equipment will be picked up.

Medical technicians experienced in surgical and X-ray work are needed by the War Department.

Detailed information regarding the examinations and the proper application forms may be obtained from the Secretary of the United States Civil Service Examiners at any first- or second-class post office or from the United States Civil Service Commission, Washington, D. C.

Dr. William Frederick Orr, Jr., announces the opening of an office for the practice of neurology and psychiatry, 913 Bennie-Dillon Building, Nashville.

The American Board of Obstetrics and Gynecology will examine candidates in the near future. For further information and application blank, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh, Pennsylvania.

The Department of Obstetrics and Gynecology of the University of Chicago and the Chicago Lying-in Hospital, through the cooperation of the Children's Bureau, United States Department of Labor and the Illinois State Department of Public Health, offers five postgraduate courses of four weeks each between January 6 and June 21. The beginning dates of each are: January 6, February 10, March 17, April 21, and May 26. All the members of the department and all services and units of the institution participate in the instruction. Only a limited number of postgraduate students are accepted for each period. A deposit of twenty-five dollars is required, of which ten dollars is returned on completion of the course. All communications should be addressed to Postgraduate Course, 5848 Drexel Avenue, Chicago, Illinois.

Dr. Richard E. Ching announces the opening of offices in the Methodist Hospital Doctors Building, Memphis.

WOMAN'S AUXILIARY

SHELBY COUNTY

The Memphis Auxiliary launched its fall schedule with a hearty welcome to forty-six new members at the October meeting held at the University Center. Mrs. Joseph I. Mitchell, whose committee called on the doctors' wives and invited them to join the Auxiliary, introduced the members, and Mrs. Calvert Chaney, president, officially welcomed them.

A highly interesting debate on the issues of the presidential campaign was the feature of the program planned by Mrs. W. T. Pride. Mrs. Thomas Nelson Coppedge and Mrs. Harry Anderson were the speakers, with the former choosing the Democratic side and Mrs. Anderson the Republican.

Announcement was made at the business session preceding the debate of the Auxiliary's plans to entertain visiting wives at the American Academy of Pediatrics meeting here November 18-20. Mrs. Edward Clay Mitchell is chairman of the entertainment committee, which will feature a breakfast at the Memphis Country Club on November 19, followed by a drive to Holly Springs, Mississippi, to visit the antebellum homes there.

After the meeting the new members were entertained at luncheon, with Mrs. Nicholas Gotten serving as chairman.

RUTHERFORD COUNTY

Dr. Lois Kennedy, speaking on "Allergy," was program feature at the meeting of the Woman's Auxiliary to the Rutherford County and Stones River Medical Society held recently at "Shadowlawn," the country home of Dr. and Mrs. J. A. Scott, with Mrs. J. C. Kelton cohostess.

Doctor Kennedy outlined the history of allergy, saying that there was little known about the disease prior to forty years ago. She told of the advances which had been made in its study in recent years and listed the seven common manifestations of the disease.

Mrs. Matt Murfree, program chairman, announced that Mrs. Harvey Carter would review "The Doctor and His Patient" (Dr. A. E. Hertzler) at the November meeting; Dr. Alex Moffatt will speak at the January meeting and that Mrs. J. K. Marshall is scheduled to speak on current events at the February meeting of the Auxiliary.

Mrs. Harry Gannaway, pianist, and Miss Jean Kirtley, violinist, were presented in a special musical program.

Mrs. I. E. Phillips, Mrs. C. E. Knowles, and Mrs. Jesse Huggins were visitors.

It was announced that Mrs. A. J. Jamison and Mrs. V. S. Campbell would be hostesses to the November meeting.

DAVIDSON COUNTY

The home of Mrs. Frank Fessey on Berry Lane was the scene of the annual membership tea of the Auxiliary to the Nashville Academy of Medicine and the Davidson

County Medical Society. Chrysanthemums in autumn shades were used to decorate the reception rooms for the occasion.

In the receiving line were Mrs. Fowler Hollabaugh (president), Mrs. T. G. Pollard, Mrs. Hollis Johnson, Mrs. Fessey, and other officers of the Auxiliary.

The tea table, covered with an Italian cut-work cloth, had as its centerpiece a silver bowl of pink and yellow chrysanthemums, flanked by burning ivory tapers in silver candelabra. Mrs. G. C. Savage, Mrs. B. S. Anderson, Mrs. A. N. Hollabaugh, and Mrs. L. H. Tanksley alternated in pouring tea. Assisting in serving were Mrs. W. B. Anderson, Mrs. Lynch Bennett, Mrs. Y. W. Haley, Mrs. W. W. Wilkerson, Jr., Mrs. J. D. Lester, Mrs. Rogers Herbert, Mrs. George Holcomb, Mrs. Ruben Gayden, Mrs. D. J. Johns, Mrs. Milton Lewis, and Mrs. Elkin Rippy.

Among the out-of-town guests at the affair were Mrs. Matt Murfree and Mrs. John Scott of Murfreesboro.

MEDICAL SOCIETIES

Davidson County:

Papers scheduled to be read are as follows:

November 19 — "Band's Contraction Ring," by Dr. M. S. Lewis. Discussion by Dr. Sam Cowan.

November 26—"Carcinoma of the Bladder," by Dr. Henry Douglas. Discussion by Dr. Horace Gayden.

December 3—"The Principles of Treatment of Carcinoma of the Cervix," by Dr. John Burch. Discussion by Dr. H. S. Shoulders.

December 10—"Fractures and Fracture Dislocations of the Spine," by Dr. E. M. Regen. Discussion by Dr. R. W. Billington.

December 17—"Carcinoma of the Rectosigmoid," by Dr. L. W. Edwards. Discussion by Dr. W. C. Dixon.

Dyer, Lake, and Crockett Counties:

The Dyer, Lake, and Crockett Counties Medical Society met in regular monthly

session, November 6, 1940. A splendid crowd enjoyed the following scientific program:

"Treatment of Carbuncles," by Dr. E. G. Kelly, Memphis.

"Gas Bacillus Infections," by Dr. C. H. Heacock, Memphis.

"Caesarean Section," by Dr. J. W. Ousler, Humboldt.

"Rheumatic Fever in Children," by Dr. J. L. Dunavant, Ripley.

(Signed) C. L. DENTON,
Secretary.

Knox County:

October 15—"Coronary Disease," by Dr. B. M. Overholt. Discussion by Drs. E. R. Zemp, R. B. Wood, E. A. Guynes, and D. R. Thomas.

October 29—"Roentgen Diagnosis in Hypophyseal Tumors," by Dr. George Tharp. Discussion led by Drs. H. H. McCampbell and Eugene Abercrombie.

November 5—"Headache," by Dr. R. B. Wood. Discussion by Drs. W. M. Luttrell, H. C. Long, and C. L. Chumley.

Washington County:

The regular monthly meeting of the Washington County Medical Society was held at the Nurses Home of the Veterans Administration Facility at 7:30 P.M., the society being guests of the medical staff of the facility.

Doctor Willis presided in the absence of the president, Dr. P. L. Fisher, who has gone to Boston for a year's postgraduate work.

The clinical program was in charge of Dr. Raymond Tompkins and the following papers were given:

"Heart Pain," by Dr. J. F. Busey.

"Chronic Arthritis," by Dr. J. F. Moore.

"Migraine," by Dr. B. L. Levy.

There were approximately forty-five members and guests present.

(Signed) WALTER D. HANKINS, M.D.,
*Secretary-Treasurer, Washington
County Medical Society.*

At the meeting to be held December 7, Dr. J. R. Bowman will discuss "Menin-

gococcus Meningitis." Doctors Friberg and Wallace will lead the discussion.

Officers for the coming year will be elected.

THE WHITE COUNTY MEDICAL SOCIETY

At the regular meeting of the White County Medical Society on October 10, 1940, Dr. C. B. Roberts of Sparta was host with a testimonial dinner for Dr. S. E. Gaines, who has completed fifty years in the practice of medicine. The meeting was held at the home of Doctor and Mrs. Roberts. After the usual business preliminaries Doctor Roberts introduced Doctor Gaines, who, after expressing his thanks to friends, introduced the guest speaker of the day, Doctor Reeves of Gainesboro. Doctor Reeves, with a ready flow of well-chosen words, carried us back to a meeting of the Upper Cumberland Medical Society which he had attended in Sparta forty years ago. "At that time," said he, "the meeting was held in the old Dibrell Normal with a full house present. The attending doctors were lodged in the homes of Sparta residents. I," said Doctor Reeves, "stayed at the home of Mr. Bob Byles. Several doctors were kept in the homes of Wakeman and Hodges of distillery fame. Mr. Byles served their product occasionally and will be remembered by the older residents for his loud and infectious laughter. Some of the meetings were almost broken up by this laughter, but the medical society voted a board of thanks to Mr. Byles for his laughter. Dr. W. B. Young was president of the society at this meeting and some of the members were: two Doctor McColgans, brothers from Clay County; Doctor Snodgrass, White County; Dr. Abe King, Chestnut Mound; Doctor Swope, Carthage; Doctor Bridges, New Middleton; Dr. John Jones, who was the outstanding surgeon of the section; Doctors Farmer, both father and son; Doctors Fowler and Hale, Gainesboro; and two Doctors Martin, Cookeville. Doctor Fowler boasted all through the meeting of the then hard-to-believe fact that he came from Gainesboro to Sparta in one day.

"Malaria and typhoid furnished me hog and hominy in those days," said Doctor Reeves, "for every family had malaria at least once. Many times have I left home before day and visited typhoid cases one after the other all day, returning after dark. There was much diphtheria in those days which I treated with teaspoon doses of calomel, a croup kettle, and a silent prayer."

"Another visit," said Doctor Reeves, "was made to Sparta in a surrey with three men to attend seances by 'The Mighty Aber and Doctor Shellhouse of Kansas City.' Many fine pioneer citizens of White County were regular attendants for the 'materializations.'"

"It is a pleasure to be here today and pay homage to my professional brother, a man who has for fifty years been an asset to his community and famous within the medical profession for his high ethical conduct."

Doctor Mooneyham of Rock Island spoke briefly, saying: "It takes a lot of hardship to make a good doctor." He as well as all present wished for Doctor Gaines many more years of happiness and service.

All members present and Dr. Ed Draper, also a visitor from Gainesboro, complimented Doctor Gaines upon his fine record and expressed sentiment showing the universal high esteem in which Doctor Gaines is held within the medical society.

Upon completion of the program Mrs. Roberts served all present a most delicious meal, the food and decorations bespeaking the Thanksgiving season. No greater compliment could have been paid than the gusto with which the food was attacked. A hungry schoolboy would have been put to shame.

All present agree that Doctor and Mrs. Roberts succeeded in paying high tribute to Doctor Gaines and to the honorable profession of medicine.

(Signed) B. L. UPCHURCH,

Acting Secretary, White County Medical Society.

OTHER MEDICAL SOCIETIES

ABSTRACTS OF PAPERS PRESENTED AT VANDERBILT MEDICAL SOCIETY, OCTOBER 4, 1940

1. Case Report: "Traumatic Cyst of Pancreas," by Dr. Carrington Harrison.

The patient was an eighteen-year-old white male, over whose abdomen a heavy log had rolled seven months prior to admission. From six weeks after receipt of injury until time of admission there had been varying abdominal distention most marked in the left upper quadrant, progressive weight loss, and weakness.

At operation the pancreas was found to be completely divided in the middle with the distal end in communication with a tremendous thin-walled cyst. This part of the pancreas and part of the cyst wall were removed. Recovery was uneventful.

This case was discussed by Drs. Max Little, Alfred Blalock, and W. E. Garrey.

2. "Some Clinical and Laboratory Aspects of Tularemia," by Drs. Allen Kennedy and John Ransmeier.

The case histories and findings at autopsy of three patients who had the pneumonic type of tularemia were presented. This form of the disease is relatively rare and these patients during life presented difficult problems in diagnosis. The cases were similar and were characterized by high continued fever, drowsiness, pain in the axilla or flank, accumulation of pleural fluid, absence of any specific diagnostic laboratory data, either serological or cultural, until shortly before death. In the last two cases cultures of the pleural fluid on special media yielded *B. tularensis*. None of the patients had any kind of skin lesion.

This paper was discussed by Drs. E. W. Goodpasture, H. E. Meleney, Hugh J. Morgan, and Roy C. Avery.

3. "Some Observations on Experimental Tularemia and Brucellosis," by Dr. G. John Budding and Mr. Frank C. Womack, Jr.

Chick embryos of twelve days' incubation have been infected by membranal inoculation with *B. tularensis* and a strain of *Brucella*. Microscopic studies of various stages of the infection indicate that this host is well adapted for studying the early stages in the pathogenesis of these infections.

B. tularensis exhibits a marked affinity for ectodermal epithelial cells, *Brucella* more predominantly for capillary endothelium than for ectodermal epithelium. It is suggested that this facultative intracellular parasitism represents an important feature in the early stages of the pathogenesis in the disease in man, and that preliminary intracellular growth is required for the establishment of these infectious diseases.

This paper was discussed by Drs. E. W. Goodpasture, H. E. Meleney, Hugh J. Morgan, and Roy C. Avery.

The Ninety-Second Semiannual Meeting of the Middle Tennessee Medical Association will be held in Franklin, Tennessee, on November 21.

The following papers are scheduled to be read:

"Agranulocytosis," by Dr. James T. Boykin, Lewisburg. Discussers: Drs. Sam Riven, Nashville, and Walter Pyle, Franklin.

"An Analysis of 5,000 Consecutive X-ray Examinations of the Gastrointestinal Tract and Gall Bladder," by Dr. H. S. Shoulders, Nashville. Discussers: Drs. C. M. Hamilton, Nashville, and J. W. Danley, Lawrenceburg.

"Hemorrhoids," by Dr. Henry M. Carney, Nashville. Discussers: Drs. Ben Marshall, Fayetteville, and D. W. Smith, Nashville.

"Some Remarks on the Therapy of Malaria, Especially Stressing an Improved Therapeutic Test," by Dr. F. J. Runyon, Clarksville. Discussers: Drs. K. S. Howlett, Franklin, and O. N. Bryan, Nashville.

"Some Clinical Aspects of Pain in the Chest," by Dr. Tinsley R. Harrison, Nashville. Discussers: Drs. J. O. Manier, Nashville, and J. R. Gott, Murfreesboro.

Presidential address: "The Doctor and His Health, with Special Reference to the Cardiovascular System," by Dr. B. H. Woodard, Spring Hill.

"Upper Respiratory Tract Infections and Their Influence on the Pulmonary System," by Dr. R. C. Gaw, Gainesboro. Discussers: Drs. B. T. Nolen, Franklin, and T. F. Frist, Nashville.

"Muscular Atrophy," by Dr. W. DeGutierrez-Mahoney, Nashville. Discussers: Drs. Thos. D. McKinney, Nashville, and E. M. Ragsdale, Columbia.

"Vitamins B and K in Pediatrics," by Dr. Hearn Bradley, Nashville. Discussers: Drs. T. Fort Bridges, Nashville, and O. Reed Hill, Lebanon.

"The Foam Powder and Sponge as a Contraceptive Measure," by Dr. Margaretta K. Bowers, Lyles-Wrigley. Discussers: Drs. D. Scott Bayer, Nashville, and J. O. Walker, Franklin.

The annual meeting of the Scientific Committee of the Georgia Pediatric Society will be held in Atlanta on December 12, beginning with a luncheon at 12:30 P.M. and an afternoon and evening session.

The following physicians will appear on the program:

Dr. Lee Edward Farr, Wilmington, Delaware. Subject, "The Prognostic Value of Renal Function Test in Nephritis and the Role of Diet in the Therapy of Nephritis."

Dr. Samuel Zachary Levine, New York. Subject, "The Handicaps of Prematurity and How to Meet Them, and Water and the Growing Organism."

Dr. Edward F. Bland, Boston, Massachusetts. Subject, "The Manifestations of Rheumatic Fever in Childhood and the Course of Rheumatic Heart Disease in Childhood and Adolescence."

The Clinical Congress meeting of the Chattanooga and Hamilton County Medical Society was held October 31.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By HUGH BARR, M.D.
Medical Arts Building, Nashville

Further Experience with Divinyl Ether (Vinethene) Anesthesia. Livingston, Light, Heidrick, and Kable. *Journal of American Medical Association*, October 19, 1940.

This study deals with a total of 2,050 consecutive administrations of divinyl ether. It was used in 325 instances alone and as an induction agent preceding another anesthetic in 1,703 instances. In these 325 instances where it was the only anesthetic agent employed, the ages of the patients ranged from ten months to sixty-one years of age. These were minor cases, many of whom were in poor condition due to various abnormalities and complications.

Loss of consciousness was obtained by the use of one to twenty-five cubic centimeters. Loss of consciousness was obtained in from one-fourth to five minutes. Anesthesia was from a few to forty-five minutes. Amount used was from less than five cubic centimeters to 120 cubic centimeters.

Consciousness returned in a few minutes and with no serious complications. It is a very useful general anesthetic for office and outpatient practice.

FEVER THERAPY

By E. E. BROWN, M.D.
Doctors Building, Nashville

The Relief of Neuritic Pain by Artificial Fever Therapy. Drs. Wm. Bierman and E. A. Horowitz, Representing Fifth American Fever Conference, May, 1935.

The authors had previously reported the outstanding relief of intractable lancinating pains in *tabes dorsalis* obtained by combined fever and chemotherapy. This success caused them to treat a variety of painful neuritic and radicular affections by artificial fever therapy. They present extensive clinical evidence (forty cases) that artificial hyperpyrexia is a valuable therapeutic aid in relieving painful neuritic, myalgic, meningitic, and radicular states. The treatments were given at lower temperature levels, 103 degrees to 105 degrees Fahrenheit for two to four hours each, two to six treatments.

All types of neuritic pain were relieved immediately, but pain recurred in some cases, especially in the secondary neuritides from compressive lesions. Fever therapy seems to be a distinct advance over all local forms of heat production in combatting pain. However, it is not recommended to replace other accepted forms of therapy in neuritis, but only as an aid in the management. It

probably hastens convalescence in the severe toxic, infectious polyneuritic states.

In twenty cases of sciatic neuritis, pain was completely relieved in eighty per cent by combined fever therapy and epidural injections. Those not relieved were of the compressive types.

Out of six cases of brachial neuritis three were permanently relieved of pain and muscle joint stiffness by fever therapy alone.

In four cases of toxic infections polyneuritis and one case of infective neuronitis, all suffering severe pain, complete relief of pain and hyperesthesia followed a few sessions of fever therapy. Vigorous vitamin therapy was also used in these cases.

In three cases of herpes zoster with severe radiculitis in elderly people, complete prompt relief from pain occurred in all after two to three fever treatments.

In two cases of benign lymphocytic meningitis, artificial fever therapy, in combination with occasional spinal drainage, seemed to give striking relief. The general condition of the patients improved with the therapy and improvement in pathologic spinal fluid findings occurred after each fever session.

In four cases of arthritis disease with secondary neuritis or neuralgic conditions, marked relief of pain was obtained by fever therapy.

The physiologic mechanism of general fever induction affecting relief of neuritic pain is not well understood. The increased blood flow, peripheral vasal dilatation in the inflamed areas, is likely to increase tissue oxidation and nutrition. The factors of leukocytosis, phagocytosis, and mobilization of immune bodies secondary to induce fever may play a part in the absorption of rheumatic deposits, dilutions of toxins, and the healing of inflamed nerve tissues.

The authors recommend fever therapy as a safe, efficient means of relieving all types of neuritic and radicular painful affections. Its use should be limited to institutions completely equipped and with a trained personnel.

OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.
Suite 234 Doctors Building, Nashville

The Progress of Caesarean Section. Louis E. Phaneuf. *American Journal of Obstetrics and Gynecology*, 603: 608, October, 1940.

A careful consideration of the progress of Caesarean section from 1920 to 1940 has shown us that this operation is not a panacea for all obstetric ills. The indications, which doubtless were extended because of the increased safety of the low or cervical operations, should be carefully evaluated and should be reduced to a minimum. While the general surgeon, technically, may perform a perfectly adequate operation, his training is not such that he may evaluate the purely obstetric methods

against abdominal delivery in a given case. In such instances the requirement of a consultation with an obstetric consultant, as is done in a large number of hospitals, will have a salutary effect in reducing morbidity and mortality. The improved results of Caesarean section in the hands of the trained obstetric specialist may not be due to the fact that he can perform the operation better than the general surgeon, but rather because of the fact that his obstetric training has taught him the contraindications to this operation.

The chief contraindications to Caesarean section are: (1) a dead child, except in the presence of an absolute pelvic indication; (2) poor physical condition of the mother; (3) improper surroundings for aseptic technique; (4) a patient infected from protracted labor, vaginal examinations performed with questionable antisepsis and asepsis, and rupture of the membranes; (5) the classical Caesarean section is absolutely contraindicated in the presence of a potential or frank infection.

The newer methods of performing Caesarean section, largely standardized during the last two decades, will doubtless continue to play an important role in reducing morbidity and mortality. Finally, careful prenatal study, the use of X-ray pelvimetry, recently developed, examination before labor, under anesthesia if necessary, a test of labor under aseptic conditions, followed by the low or cervical operation when indicated, the use of vaginal antiseptics added to a rigid aseptic technique, and limiting the operation to strict indications will all help in keeping morbidity and mortality in Caesarean section at the lowest possible figure.

OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.
Doctors Building, Nashville

Rosacea Keratitis and Conditions with Vascularization of Cornea Treated with Riboflavin. L. V. Johnson and R. E. Eckardt.

Of thirty-six patients with clinical rosacea keratitis, given orally at least three milligrams of riboflavin daily, the four who did not respond satisfactorily showed altered gastric secretions, especially the amount of free hydrochloric acid. Thirty-two of the patients had prompt healing of the corneal lesions, and no recurrences during therapy with riboflavin. The similarity between the conditions of the eyes with rosacea keratitis and the conditions of eyes of rats in which ulcers developed because of deficiency of riboflavin in the diet is pointed out. The mechanism is thought to be inadequate oxidation of the enzymes, such as Warburg's yellow enzyme, in the avascular cornea. The authors feel that rosacea keratitis may be the direct result of riboflavin deficiency, and the formation of new blood vessels, telangiectasia, corneal vascularization, and distention of vessels may possibly be part of the physiologic response of blood vessels to deficient oxidative reactions. Riboflavin therapy

apparently is of no value in conditions accompanied by large blood vessels or in injuries in which scar tissue is present. For constant benefit continuous therapy is advisable.

PEDIATRICS

By JOHN M. LEE, M.D.
Doctors Building, Nashville

Sulfathiazole in the Treatment of Pneumonia in Infants and Children. John P. Scott, M.D., Philadelphia, Pennsylvania, and Albert M. Jones, M.D., Memphis, Tennessee. *The Journal of Pediatrics*, October, 1940.

The authors report on 167 patients treated with sulfathiazole and compare the results with ninety-three patients treated with sulfapyridine as observed in Philadelphia hospitals. In this study 146 were diagnosed lobar pneumonia and nineteen bronchopneumonia, while the classification of two was uncertain. In addition to repeated physical examinations the usual laboratory aids were employed in this study such as X-rays, blood counts, blood cultures, culture and typing of sputum. Blood counts and urinalyses and determinations of drug content of the blood were done repeatedly during treatment.

The dosage of thiazole was calculated according to the weight of the patient, the daily dose being usually one grain per pound. Usually one-fourth to one-half of this amount was given as an initial dose, and then one-eighth of the daily dose was given every three hours day and night. This was continued until the temperature had been normal for forty-eight hours. When indicated oxygen, transfusions, and other measures to modify symptoms were used in addition to chemotherapy. The sulfapyridine treated cases were managed similarly, receiving one and one-half or one grain of the drug per pound per day.

The sulfathiazole treated cases responded in every way as have cases treated with type specific serum and with sulfapyridine. There was precipitated an early crisis, lessened fever and toxicity, relief of dyspnea, the patient appeared to feel better, and with the fall in temperature the appetite improved. In eighty-seven cases otitis developed, fifty-six requiring drainage. Pleural effusion developed in seven.

Of the 167 sulfathiazole treated patients, five died. Two of these were in extremis when admitted and received the drug for less than twenty-four hours. One, aged six weeks, was found to have multiple abscesses of the right lung and massive empyema at autopsy. Culture showed staphylococcus aureus as the causative organism. The other two cases received adequate doses of the drug, but did not respond. All the deaths were in infants under one year of age.

The results in bronchopneumonia paralleled those in lobar pneumonia. All cases responded equally

well, regardless of the stage of the disease when chemotherapy was initiated.

Compared to the ninety-three cases treated with sulfapyridine, the fall of the temperature to normal was less prompt in the group given sulfathiazole. Otherwise there was no significant difference in the course of the disease in the two groups.

Toxic effects were largely gastrointestinal, vomiting occurring in 12.5 per cent and diarrhea in three cases given sulfathiazole. In none of these was it deemed necessary to discontinue the drug. Cyanosis was not observed in any of the patients that recovered. Gross hematuria was not observed, but in three cases microscopic hematuria was found. No hemolytic anemia occurred, but granulocytopenia developed in two patients. The toxic effects from sulfapyridine were more frequent and more marked.

It is felt that sulfathiazole is an effective drug in the treatment of pneumonia, easy to administer, and used in moderate dosage over a brief period of time has proved to be a safe drug in the author's experience.

ROENTGENOLOGY

By FRANKLIN B. ROGART, M.D.
Medical Arts Building, Chattanooga

Abnormally Wide Respiratory Movement of Lower Lung Structures: Roentgen Evidence of Obstructive Emphysema. Ross Golden. *American Journal of Roentgenology and Radium Therapy*, Vol. 44, No. 3, p. 325, September, 1940.

A previously unrecognized sign of incomplete bronchial obstruction with the resulting obstructive emphysema is described. It is of value because it is recognized fluoroscopically and because an increasing number of cases are being fluoroscoped.

The well-known roentgen signs of obstructive emphysema which have been summarized by Manges are as follows:

1. Increased transparency of the affected lung.
2. Depression and limitation of movement of the diaphragm on the affected side.
3. Displacement of the heart and mediastinal structures away from the affected side.
4. Increased excursion of the diaphragm on the unaffected side due to compensatory emphysema.

As a corollary to three, Jackson and Jackson mention the to and fro movement of the heart with respiration (away from the affected side with expiration and back toward the normal position with inspiration).

In some cases of inferior or middle lobe obstruction, the emphysema may be relatively slight. Even on forced expiration, although slightly increased radiability may be present compared to the rest of the lung, no limitation or flattening of the diaphragm and no displacement of mediastinal structures may occur because the relatively in-

creased space occupied by the incompletely deflated lobe may be compensated for by compression of the other normally deflatable lobe or lobes.

Two cases are reported where unusual marked movement of the lower lobe, equal to the movement of the diaphragm, was observed. In one case the presence of a calcified area well out in the lung parenchyma of the lower lobe made their observation easy.

SUMMARY

The degree of distention of the involved lobe in obstructive emphysema may not be sufficient to cause respiratory displacement of the mediastinum and depression of the diaphragm. Two cases are reported in which obstructive emphysema of the right lower lobe and of the right middle lobe was first detected at roentgenoscopy by noting abnormal respiratory displacement of the lower lung structures parallel with the movement of the diaphragm.

ABSTRACTOR'S NOTE.—This new sign of partial obstruction in a bronchial trunk with the resulting comparatively small amount of emphysema should be known to the many general men who are using a fluoroscope as well as roentgenologists. It may give the man a lead which will lead to a brilliant diagnosis.

UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.
By G. A. WILLIAMSON, JR., M.D.
307 Doctors Building, Knoxville

Use of Sulfathiazole and Sulfamethylthiazole in Treatment of Gonorrheal Urethritis. Theodore M. Burkholder and Frederik Bang. *Journal of Urology*, October, 1940.

This article is a report of 125 cases of acute and chronic gonorrhea in the male treated with sulfathiazole and sulfamethylthiazole. Among these were eleven cases previously resistant to sulfanilamide and sulfapyridine, two of which failed also to respond to these newer drugs. All patients were hospitalized. Sulfathiazole is rapidly absorbed and excreted. Ninety per cent can be recovered in the urine in twenty-four hours. Nausea, vomiting, cyanosis, vertigo, and lassitude are less common than with the other sulfanilamide group of drugs, although skin rashes, fever, hematuria, and leukopenia have been reported.

Of the group of 125 cases, 117 were cured with the sulfathiazole and sulfamethylthiazole. In the patients who responded, the discharge ceased in from 4.8 to 7.3 days after treatment was begun. The initial dose of sulfathiazole was from four to five grams, followed with one gram every four hours for fourteen days. The average blood concentration was six milligrams per cent. With sulfamethylthiazole the initial dose was one gram, continued with one-half gram every four hours, maintaining an average blood concentration of 4.8 milligrams per cent.

Among the 100 cases given sulfathiazole, six had a rash, five had conjunctivitis, one had urticaria with painful, swollen joints, one had nausea, five had fever, and one had leukopenia.

Of the twenty-five who received sulfamethylthiazole, four had toxic rashes and one had cyanosis.

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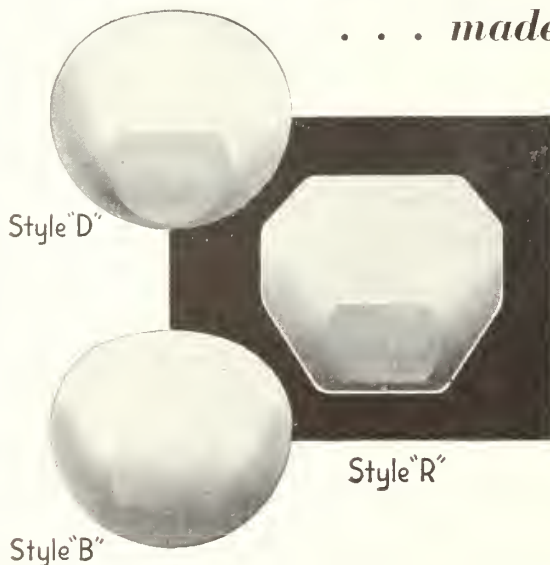
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Volume XXXIII

DECEMBER, 1940

No. 12

PROCEEDINGS OF THE HOUSE OF DELEGATES, ONE HUNDRED SEVENTH
ANNUAL SESSION, TENNESSEE STATE MEDICAL ASSOCIATION
HOTEL PATTEN, CHATTANOOGA, TENNESSEE
APRIL 9, 10, 11, 1940

TUESDAY AFTERNOON MEETING

The opening session of the meeting of the House of Delegates of the Tennessee State Medical Association, held in connection with the One Hundred Seventh Annual Meeting of the Association, at the Hotel Patten, Chattanooga, April 9-11, convened at 2:10 o'clock, Dr. E. R. Zemp presiding.

THE SPEAKER: The House will please come to order. The first order of business will be the roll call by the Secretary.

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J. L. Hamilton, Chattanooga		W. E. Bryan, Chattanooga
E. S. Blair, Apison		W. J. Sheridan, Chattanooga
O. H. Williams, Savannah	Hardin, Lawrence, Lewis, Perry, Wayne	C. C. Stockard, Lawrenceburg
Roy M. Lanier, Brownsville	Haywood	A. H. Sorrelle, Brownsville
R. Graham Fish, Paris	Henry	Geo. D. Boone, Paris
J. W. Frost, Centerville	Hickman	
M. S. Roberts, Knoxville	Knox	R. G. Waterhouse, Knoxville
A. H. Lancaster, Knoxville		J. L. Raulston, Knoxville
Kyle Copenhaver, Knoxville		E. A. Gwynes, Knoxville
Ralph Monger, Knoxville		R. B. Wood, Knoxville
J. L. Dunavant, Ripley	Lauderdale	J. R. Lewis, Ripley
W. S. Joplin, Petersburg	Lincoln	W. F. Cannon, Fayetteville
J. R. Watkins, Loudon	Loudon	J. H. Leeper, Lenoir City

J. Y. Freeman, Lafayette	Macon	W. B. Camp, Lafayette
Glenn Batten, Jackson	Madison	Henry H. Herron, Jackson
J. E. Powers, Jackson		S. M. Herron, Jackson
D. B. Andrews, Columbia	Maury	O. J. Porter, Columbia
C. O. Foree, Athens	McMinn	W. R. Arrants, Athens
E. M. Smith, Selmer	McNairy	J. R. Smith, Selmer
R. C. Kimbrough, Madisonville	Monroe	T. M. Roberts, Madisonville
M. A. Blanton, Union City	Obion	M. T. Tipton, Union City
H. B. Nevans, Livingston	Overton	Myrtle Lee Smith, Livingston
F. O. Geisler, Isabella	Polk	H. P. Hyde, Copperhill
Thurman Shipley, Cookeville	Putnam	
F. A. Neergaard, Harriman	Roane	R. F. Regester, Rockwood
J. S. Freeman, Springfield	Robertson	W. W. Porter, Springfield
V. S. Campbell, Murfreesboro	Rutherford	W. T. Robison, Murfreesboro
E. G. Kelly, Memphis	Shelby	J. J. Hobson, Memphis
W. C. Chaney, Memphis		C. G. Andrews, Memphis
W. B. Key, Memphis		S. W. Colquhoun, Memphis
J. H. Francis, Memphis		V. D. King, Memphis
H. W. Qualls, Memphis		E. R. Hall, Memphis
E. D. Mitchell, Memphis		C. D. Allen, Memphis
C. E. Warde, Memphis		A. R. Porter, Memphis
A. O. Parker, Brush Creek	Smith	R. E. Key, Carthage
C. F. N. Schram, Kingsport	Sullivan-Johnson	F. L. Alloway, Kingsport
C. D. Robbins, Gallatin	Sumner	I. H. Beasley, Gallatin
H. L. Monroe, Erwin	Unicoi	Robert Harvey, Erwin
Lee K. Gibson, Johnson City	Washington	J. L. Hankins, Johnson City
R. W. Brandon, Sr., Martin	Weakley	R. W. Brandon, Jr., Martin
E. B. Clark, Sparta	White	E. C. Mason, Quebeck
J. O. Walker, Franklin	Williamson	W. C. Williams, Franklin
B. S. Rhea, Lebanon	Wilson	

SECRETARY SHOULDERS: Mr. Speaker, a quorum is present.

THE SPEAKER: I rule that the roll call as heard, and the ex-presidents and the officers, constitute a quorum. I will appoint the committees.

COMMITTEES APPOINTED

Credentials Committee—Dr. Ralph H. Monger, Chairman, Knoxville; Dr. J. P. Gilbert, Nashville; Dr. E. G. Kelly, Memphis.

Committee on Reports of Officers—Dr. O. N. Bryan, Chairman, Nashville; Dr. M. S. Roberts, Knoxville; Dr. W. B. Key, Memphis.

Committee on Reports of Committees—Dr. J. O. Manier, Chairman, Nashville; Dr. Hiram A. Laws, Jr., Chattanooga; Dr. W. L. Williamson, Memphis.

Committee on Resolutions—Dr. Jack Thompson, Jr., Chairman, Jackson; Dr. J. L. Hamilton, Chattanooga; Dr. David W. Hailey, Nashville.

1939 MINUTES ADOPTED

At the suggestion of the Secretary, on motion made by Dr. H. B. Everett, seconded by Dr. W. B. Burns, a vote was carried, whereby the minutes of the 1939 meeting were adopted as published in the December issue of the JOURNAL.

NOMINATING COMMITTEE

The Speaker ordered a five-minute recess, during which the delegates from the three grand divisions of the state were to elect the Nominating Committee.

Upon reconvening after recess, the report of the Credentials Committee was passed, due to the absence of the Chairman.

The Nominating Committee was reported as follows:

East Tennessee was reported by Dr. Hiram A. Laws, Jr.—Dr. J. B. Swafford, Chattanooga; Dr. L. E. Dyer, Greeneville; Dr. Ralph H. Monger, Knoxville.

Middle Tennessee was reported by Dr. O. N. Bryan—Dr. J. O. Manier, Nashville; Dr. John S. Freeman, Springfield; Dr. Joe B. Wright, Lynnville.

West Tennessee was reported by Dr. W. B. Key—Dr. W. B. Burns, Memphis; Dr. J. D. Brewer, Dyersburg; Dr. Glenn Batten, Jackson.

REPORTS OF OFFICERS

The Speaker called for Reports of Officers.

DR. C. M. HAMILTON: Mr. Speaker, I wish to report as Treasurer of the State Society, and I wish to submit an audit of the transactions as my report.

REPORT OF AUDIT FOR YEAR ENDED DECEMBER 31, 1939

To the Chairman and Board of Directors, Tennessee State Medical Association, Nashville, Tennessee.

SIRS:

We have audited the cash receipts and disbursement records of the Tennessee State Medical Association for the year ended December 31, 1939. The results of our examination are presented in the comments on audit and on the exhibit and schedules designated as follows:

Exhibit "A"—Statement of Receipts and Disbursements for the Year Ended December 31, 1939.

Schedule A-1—Cash in Banks at December 31, 1939.

Schedule A-2—Statement of Receipts by Months for the Year Ended December 31, 1939.

Schedule A-3—Statement of General Fund for the Year Ended December 31, 1939.

Schedule A-4—Investments at December 31, 1939.

Comments on Audit

Cash in banks, \$1,674.83, was verified by reconciliations of the statements as rendered by the banks with the Association's records. All cash

receipts appearing in the records were traced into the depositories. Cancelled checks were examined, signatures and endorsements scrutinized, and the amounts and payees thereon were compared with the cash disbursement record for a verification of disbursements.

Investments, \$16,790.73, and Cash Available for Investment, \$52.06. The Association has invested funds aggregating \$16,790.73. This is represented by \$12,669.73 in first mortgage real estate notes at cost and \$4,000.00 par value bonds of the Home Owners Loan Corporation at cost of \$4,121.00. These securities were examined by our representative. On Schedule A-4 the items comprising the invested funds are detailed. For the purpose of record the bonds are carried at cost. We were informed by Mr. W. L. Whitaker of the First Mortgage Company that the Association had with that company on December 31, 1939, a cash balance of \$52.06, representing collection of interest.

General

Fire insurance on office furniture and fixtures in the amount of \$500.00 and fidelity bond on the Treasurer, Dr. Charles M. Hamilton, were in effect at December 31, 1939. During the year 1939 the fire insurance policy was renewed for a three-year period and the premium for one year was paid on the fidelity bond.

The records are maintained on a cash receipt and disbursement basis and we have not attempted to prepare a schedule of assets and liabilities at December 31, 1939. However, investigation revealed that the only item of substantial amount owing on December 31, 1939, was that of social security tax, \$28.68, for the last quarter of 1939. This was paid in January, 1940, in accordance with law, one month after the close of the quarter being allowed for preparation and filing of the return and payment of the tax.

During the year 1939 the Association published and paid for twelve issues of the MEDICAL JOURNAL.

Respectfully submitted,

OSBORN AND PAGE.

By HILARY H. OSBORN.

April 1, 1940. Certified Public Accountants.

EXHIBIT "A"

Statement of Receipts and Disbursements for Year Ended December 31, 1939

RECEIPTS—SCHEDULE A-2	
Dues	\$9,696.00
Interest on Investments	564.51
Payments on Principal of Investments	1,174.08
Advertising	5,652.83
Exhibit Space	720.00
Subscriptions and Extra Copies of JOURNAL	28.80
Cuts	91.34
Refund—Postgraduate Course in Obstetrics	98.17
Miscellaneous	26.95
Total Receipts	\$18,052.68
DISBURSEMENTS—SCHEDULE A-3	
MEDICAL JOURNAL	\$3,868.69
Convention Expense	705.54
Salaries	5,736.00
Board of Trustees	9.00
Investments	5,400.00
Returned Checks	36.00
Medical Education Committee	1,125.00
General Expenses and Disbursements	3,021.24
Total Disbursements	\$19,901.47
Excess of Disbursements over Receipts	\$ 1,848.79
Represented by:	
General Fund Balance, December 31, 1938	\$3,523.62
Less	
General Fund Balance, December 31, 1939, Schedule A-1	1,674.83
Decrease in Bank Balance, General Fund, Year Ended December 31, 1939	\$ 1,848.79

SCHEDULE A-1

Cash in Banks at December 31, 1939

American National Bank	
Balance per Statement, December 31, 1939	\$2,027.69
Add Receipts of December 30, 1939, Credited by Bank, January 2, 1940	18.00
Less Outstanding Checks	\$2,045.69
No. 436, Ideal Laundry	\$ 2.00
No. 437, McQuiddy Printing Co.	874.05
Balance per Books, December 31, 1939	\$1,169.64
Third National Bank	
Balance per Statement, December 31, 1939	\$ 505.19
No Outstanding Checks	
Balance per Books, December 31, 1939	\$ 505.19
Cash Balance in Banks, December 31, 1939, Exhibit "A"	\$1,674.83

SCHEDULE A-2

Statement of Receipts by Months for Year Ended December 31, 1939

Month	Total	Dues	Interest on Investments	Principal of Investments	Advertising	Exhibit Space	Subscriptions and Extra Copies of Journal	Cuts	Refunds and Miscellaneous
January	\$ 3,667.38	\$3,204.00	\$	\$	\$ 317.21	\$ 40.00	\$ 5.00	\$	\$101.17
February	3,694.68	2,334.00	89.70	550.00	580.38	120.00	6.60	10.00	4.00
March	2,582.23	2,136.00			359.89	40.00		38.34	8.00
April	1,869.79	960.00			421.64	480.00	.20		7.95
May	827.94	306.00			476.94	40.00	5.00		
June	569.76	78.00			481.36		.40	10.00	
July	473.23	90.00			377.23		4.00		2.00
August	510.37	78.00			415.77		1.60	15.00	
September	1,055.35	90.00	309.79	284.30	368.26		2.00		1.00
October	502.13	12.00			477.63		2.00	10.50	
November	345.66	36.00			309.66				
December	1,954.16	372.00	165.02	339.78	1,066.86		2.00	7.50	1.00
Totals	\$18,052.68	\$9,696.00	\$564.51	\$1,174.08	\$5,652.83	\$720.00	\$28.80	\$91.34	\$125.12

SCHEDULE A-3**Statement of General Fund for Year Ended
December 31, 1939**

RECEIPTS	
Balance, January 1, 1939	\$ 3,523.62
Dues	\$9,696.00
Interest on Invested Funds	564.51
Payment on Principal of Investments	1,174.08
Advertising	5,652.83
Exhibit Space	720.00
Subscriptions and Extra Copies of JOURNAL	28.80
Cuts	91.34
Refund, Postgraduate Course in Obstetrics	98.17
Miscellaneous	26.95
Total—Exhibit "A"	\$18,052.68
Total Balance and Receipts	\$21,576.30

DISBURSEMENTS	
Medical Journal:	
Printing	\$3,000.00
Inserts	127.50
Extra Copies	279.50
Indices	48.00
Roster	50.00
Copyright	22.00
Mailing	317.75
Miscellaneous	23.94
Total—Exhibit "A"	\$ 3,868.69
Convention Expense:	
Cards—Exhibitors	\$ 23.40
Badges	42.88
Hotel	85.96
Reporting Service	307.75
Programs, etc.	220.55
Miscellaneous	25.00
Total—Exhibit "A"	\$ 705.54

Salaries:	
Dr. H. H. Shoulders	\$1,500.00
Dr. W. M. Hardy	1,800.00
Miss Willard Batey	1,500.00
Mrs. Ethel Harrison	936.00
Total—Exhibit "A"	\$ 5,736.00

Board of Trustees:	
Miscellaneous Travel—Exhibit "A"	\$ 9.00

Medical Education Committee:	
Postgraduate Instruction—Exhibit "A"	1,125.00

Investments:	
Additional Investments—Exhibit "A" and Schedule A-4	5,400.00
Returned Checks—Exhibit "A"	36.00

General Expenses and Disbursements:	
Postage	\$ 208.60
Office Expense and Supplies	211.80
Rent	513.60
Lights	19.08
Telephone and Telegraph	178.15
Letter Service	30.00
Social Security Tax (Net)	57.72
Travel Service	13.00
Bond Premium—Treasurer	25.00
Rent—Safety Deposit Box	3.30
Audit	65.00
Insurance—Furniture and Fixtures	3.53
Charter Cost	28.00
Constitution and By-Laws	107.75
Minute Book	5.85
Reprints, etc.	72.80
Miscellaneous	23.20
Dr. C. M. Hamilton, Honorariums, 1938, 1939	200.00
Cuts	94.25
Travel	228.36
Refunds and Miscellaneous	16.00
Legal and Legislative Expense	916.25
Total—Exhibit "A"	\$ 3,021.24

Total Disbursements—Exhibit "A"	\$19,901.47
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Balance in General Fund, December 31, 1939, Schedule A-1	\$ 1,674.83
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SCHEDULE A-4**Investments December 31, 1939**

First Mortgage Real Estate Notes:			
Maker	Dated	Due	Amount
J. H. Horn	6-1-32	6-1-40	\$ 1,893.81
General Securities Company	4-1-36	5-1-41	1,300.00
Anna Mary Bransford	7-2-37	10-1-47	2,400.00
A. D. Talley	7-1-36	4-1-41	1,225.00
Louise Shields	9-1-36	10-1-46	550.00
*Eliza A. Matthews	4-1-37	5-1-47	1,800.00
*D. Roy Thomas	3-1-39	5-1-49	3,000.00
*Robert S. Kimmons	8-1-36	4-1-41	500.92
Total			\$12,669.73
Bonds:			
\$3,000.00 Par H.O.L.C. 2¾'s, Aug. 1, 1949/39			\$ 3,090.00
1,000.00 Par H.O.L.C. 3's, May 1, 1952/44			1,031.00
Total			\$ 4,121.00
Total Investments			\$16,790.73
Cash, Available for Investment on Deposit with First Mortgage Company			\$ 52.06

*Items representing additional purchases of investments during year ended December 31, 1939, in the total amount of \$5,400.00.

THE SPEAKER: That will be referred to the Committee on Reports of Officers.

DR. HAMILTON: I now wish to make my report as chairman of the Board of Trustees.

REPORT OF THE CHAIRMAN OF BOARD OF TRUSTEES

The Board of Trustees of the Tennessee State Medical Association had two semiannual meetings in 1939. The first meeting was at the New Southern Hotel, Jackson, April 13, 1939, and the second was the headquarters office of the Tennessee State Medical Association, Nashville, October 29, 1939.

At the meeting April 13, 1939, the following members were present: C. M. Hamilton, E. R. Zemp, J. B. Stanford, Tom R. Barry, Franklin B. Bogart, and H. H. Shoulders.

The first business transacted was the adoption of an application for a charter for incorporation of the State Association. The next business consisted of the appointment of the various members of standing committees. It is not considered necessary to read the list of names since it is included in the program of the present meeting.

The Board of Trustees went on record as approving the request of the Committee on Postgraduate Instructions in Pediatrics and gave instructions to the committee to proceed with arrangements for a similar course in internal medicine, agreeing to furnish \$1,500.00 annually towards defraying the expenses.

The Secretary was authorized to have a gavel prepared and presented to the immediate past President, Tom Barry, and to each succeeding President.

The Speaker of the House of Delegates appointed members of the Board of Trustees as a committee to consider the growing question of admission of colored physicians into the Association.

At the second meeting at the headquarters office, October 29, 1939, the following were present: C. M. Hamilton, E. R. Zemp, J. B. Stanford, Tom R. Barry, Franklin B. Bogart, W. O. Baird, H. H. Shoulders, W. M. Hardy, Charles L. Cornelius, attorney, and J. B. Ballew, attorney.

It was decided in accordance with legal advice to have a separate meeting by those signing the petition for a charter for incorporation of the State Association consisting of H. H. Shoulders, Franklin B. Bogart, J. B. Stanford, Tom R. Barry, E. R. Zemp, and C. M. Hamilton. An account of the transactions of this committee will be submitted in a separate report.

At the termination of this meeting the members of the Board of Trustees proceeded with the following present: C. M. Hamilton, E. R. Zemp, J. B. Stanford, Tom R. Barry, Franklin B. Bogart, W. O. Baird, H. H. Shoulders, and W. M. Hardy.

The Board of Trustees endorsed the action of the Committee which had been appointed to obtain a charter for incorporation of the Tennessee State Medical Association.

The question of colored physicians becoming members of the Tennessee State Medical Association was discussed freely. The transactions of the committee appointed to consider this problem are reported separately.

The policy of the State Board of Medical Examiners with regard to alien physicians was discussed and it was the unanimous opinion of the board to approve the policy of refusing to examine applicants for license to practice medicine who are not citizens of the United States either by birth or naturalization. The Secretary was advised to write the Secretary of the Board of Examiners, expressing endorsement of this policy.

The Secretary-Editor recommended to the board that a member of the Association be sent to the Conference of the Secretaries in Chicago, November 17 and 18, since much valuable information might be gained by attending this conference. It was agreed that a member from each grand division of the state be invited to take advantage of this opportunity. Dr. L. W. Edwards, chairman of the Legislative Committee, represented Middle Tennessee at this conference.

At the suggestion of Dr. J. B. Stanford it was decided to consider a change in the by-laws which would enable the House of Delegates to meet on Monday afternoon. Such a change would give delegates an opportunity to attend the general sessions more regularly. It was also agreed that an amendment to the constitution, creating the office of President-elect in order that the incoming President may have a year to prepare himself for the duties of President, was worthy of consideration.

Doctor Stanford was appointed to draft these amendments and was instructed to present them to the House of Delegates for their deliberation and adoption if considered advantageous to everyone concerned.

The financial affairs of the Association were considered and it was the opinion of the board that the funds of the Association eligible for investment should be invested in first mortgage lien notes or government bonds. The Treasurer was authorized

to make such investments. An account of these transactions is included in the audit of the Treasurer.

Respectfully submitted,

C. M. HAMILTON, Chairman.

DR. HAMILTON: I might state here, for the benefit of the examiners of these reports that, if you read the audit it looks like we have a deficit of about \$1,800.00, but if you read it carefully you will see that last year we had an investment of \$12,000.00 and now we have an investment of \$16,000.00. So the investment was carried as an expenditure, and it looks like we lost money whereas we made money.

THE SPEAKER: Referred to the Committee on Reports of Officers.

Doctor Hamilton read the report of the special meeting of the incorporators.

REPORT OF INCORPORATORS

A special meeting of the incorporators of the Tennessee State Medical Association was held in the office of Dr. H. H. Shoulders, Doctors Building, Nashville, Tennessee, October 29, 1939.

All of the incorporators were present as follows: Dr. H. H. Shoulders, Nashville, Tennessee; Dr. Franklin B. Bogart, Chattanooga, Tennessee; Dr. J. B. Stanford, Memphis, Tennessee; Dr. Tom R. Barry, Knoxville, Tennessee; Dr. E. R. Zemp, Knoxville, Tennessee; Dr. C. M. Hamilton, Nashville, Tennessee.

Dr. C. M. Hamilton acted as chairman and Dr. H. H. Shoulders as secretary.

You recall that the appointment of this committee was authorized by the House of Delegates in 1939 to make application for a charter incorporating the Association. In the meantime many unforeseen things have happened. After listening to much discussion, legal advice, and common sense suggestions, it was decided that very little benefit would be derived from incorporating the State Association and some dangers might be assumed. The following resolution, therefore, was agreed upon and adopted:

Whereas, at a special meeting of the incorporators of the Tennessee State Medical Association, held on the twenty-ninth day of October, 1939, at 11:00 o'clock A.M. in the Doctors Building in Nashville, Tennessee, it is the unanimous opinion of the incorporators that, due to certain conditions beyond their control, it is not now practicable to carry out the purposes for which the charter of incorporation was procured; and

Whereas, it is the desire of all of said incorporators that the charter of incorporation issued to the Association by the State of Tennessee on the seventeenth day of April, 1939, be surrendered and the corporation dissolved.

Now, Therefore Be It Resolved, Pursuant to the provisions of this resolution that said incorporators, whose names are set out in full in the charter of incorporation, certify the fact of the adoption of this resolution by said incorporators to the Secre-

tary of State of the State of Tennessee, to the end that the certificate of incorporation may be surrendered and a report of this action duly recorded in the office of the Secretary of State.

There being no further business to come before the meeting same was thereupon adjourned.

Respectfully submitted,

C. M. HAMILTON, Chairman.

THE SPEAKER: Referred to the Committee on Reports of Officers.

Dr. C. M. Hamilton read the committee's report.

REPORT OF COMMITTEE ON COLORED PHYSICIANS

The Committee appointed by the Speaker of the House of Delegates to study the question of admitting colored physicians into the Tennessee State Medical Association, consisting of C. M. Hamilton (chairman), H. H. Shoulders, Franklin B. Bogart, J. B. Stanford, Tom R. Barry, and E. R. Zemp, met October 29, 1939.

The committee agreed that the Tennessee State Medical Association should be ready at all times to be of assistance to the colored physicians of the State for the advancement of their knowledge and skill and for the promotion of friendly intercourse. The committee recommends that careful consideration be given to all suggestions which lead to a wholesome cooperation between colored and white physicians of the state in the performance of their respective duties.

Since this meeting a communication has been received from Dr. D. T. Rolfe, chairman of the Liaison Committee, representing the Volunteer State Medical Association, wishing to be heard on this subject. Your secretary and chairman of this committee met with the Liaison Committee of colored physicians and had a free discussion of this problem. It was suggested that their committee formulate a letter setting forth the reasons for desiring affiliation with the Tennessee State Medical Association. A copy of this letter is very explicit and is included as follows:

Dr. C. M. Hamilton
Chairman, Board of Trustees
Tennessee State Medical Association
Nashville, Tennessee
Dear Doctor Hamilton:

We, the members of the Liaison Committee of the Volunteer State Medical Association, beg leave to present to the Board of Trustees of the Tennessee State Medical Association a matter which we feel is of vital importance to our membership.

The Volunteer State Medical Association is composed of negro physicians of the State of Tennessee. There are 206 negro physicians in Tennessee. Of this number 92 were registered at the annual convention held in June, 1939.

As is well known throughout the country, membership in the American Medical Association is recognized as a final measure of a physician's qualifications. The Volunteer State Medical Association would like to secure for its members the

scientific and economic benefits that go with membership in the American Medical Association. We feel that such membership will be of benefit to our members because:

1. It will certify to the public that the holder of such membership has met the exacting qualifications of the American Medical Association as an ethical practitioner.
2. It will greatly facilitate certification before specialty boards and for scientific societies. (Thirty-two members of the Volunteer State Medical Association are on the faculty at Meharry.)
3. It will facilitate licensing by reciprocity especially in northern states, some of which have laws which demand such membership.
4. It will enable our members to qualify for certain types of practice subsidized by governmental agencies and also for certain governmental positions.

It is not our proposal to abolish the Volunteer State Medical Association as such. We feel that certain interests of our membership can be best served by maintaining our own medical society. We are hoping for some sort of affiliation whereby qualified members of our association could become members of the American Medical Association.

We do think that if some method is worked out by which our society could become a unit of the Tennessee State Medical Association and in turn of the American Medical Association, the extent of such affiliation and participation should be determined by the Tennessee State Medical Association. As an experiment, it is certainly worthy of a trial. Considering the power of the Tennessee State Medical Association to terminate such an experiment at any time, we do not think that there is any danger in attempting it.

If the Tennessee State Medical Association should consider it worth while to take up this matter, we will do all in our power to bring about the success of this movement which may well set a precedent.

We are,

Very respectfully yours,

The Liaison Committee of the Volunteer State Medical Association:

D. T. ROLFE,
Chairman, Department of Physiology, Meharry Medical College, Nashville, Tennessee.

M. J. BENT,
Department of Bacteriology, Meharry Medical College, Nashville, Tennessee.

J. W. JONES,
Department of Pediatrics, Meharry Medical College, Nashville, Tennessee.

It is readily seen that the colored physicians have a just and reasonable cause for wanting to become a part of this Association. It has been suggested by prominent members of the Association that the question of issuing a charter to the colored physicians such as is the custom in dealing with county

societies be considered. Membership in the American Medical Association seems to be the main contention and such an arrangement should solve the problem. After trying an experiment of this kind, the charter could be revoked at any time it might prove unsatisfactory.

Should this body desire to offer a solution to this problem, it will be well to consider a change in the wording of by-laws, Chapter XII, Section 4, page 24.

Respectfully submitted,
C. M. HAMILTON, Chairman.
TOM R. BARRY.
E. R. ZEMP.
FRANKLIN B. BOGART.

THE SPEAKER: Referred to the Committee on Reports of Officers.

I wish to state right here that each and every one of you has not only the privilege, but I think it is your duty to appear before any one of the committees and discuss these questions. These committees are not appointed to bar discussion at all, but simply to expedite the proceedings of the House. I am going to ask the chairman of each one of these committees to announce before the whole House at what time and place their committee is going to meet, so you can appear before them and discuss the questions that have been referred to them.

We will hear from Doctor Monger, chairman of the Credentials Committee.

DR. MONGER: Mr. Speaker, the Credentials Committee recommends the seating of Doctor Oliver from Sumner County and Doctor Rhea for Doctor Boone from Henry County.

That is all the recommendations we have to make at this time.

THE SPEAKER: You have heard the report of the Credentials Committee. All in favor say "aye"; opposed "no." It is so ordered, and these two gentlemen are seated.

Secretary Shoulders read his report.

REPORT OF THE SECRETARY-EDITOR FOR CALENDAR YEAR 1939

To the House of Delegates of the Tennessee State Medical Association:

I have the honor to submit herewith a brief report of the activities of the headquarters office for the year 1939.

Membership

On December 31, 1939, we had a membership of 1,678. This is the largest number of members the Association has ever had.

It is our conclusion that we cannot hope to build the membership any larger than this unless action is taken to make colored physicians of the state eligible to membership.

This matter of colored physicians was brought to the attention of the House in the Secretary-Editor's report last year. A resolution on the sub-

ject was presented to the House of Delegates of the American Medical Association last year, in May, after our meeting in April.

This House of Delegates took action to create a special committee to study the question and to bring back recommendations this year. The committee was appointed by the Speaker of the House and has functioned.

Component Societies

The number of chartered societies in the State Association has remained the same—*fifty-eight*.

A considerable amount of correspondence has been carried on with a view to bringing about the combination of smaller societies with each other and with larger ones to the end that no component society will have a membership of less than twenty-five. It is our opinion that such a step would result in the creation of about twenty-five component societies, and that those societies would function far more effectively from every standpoint.

We have been led to believe that Chester, Henderson, and Decatur Counties wish to join up with Madison County to form one large organization. We have urged that such a step be taken if agreeable to all concerned and have given advice as to the procedure.

We have spoken of this a number of times, and if we were to speak again on the question it would be to reiterate much that has already been said. It is a matter to be considered and acted upon by the local societies themselves.

The Journal

Twelve issues of the JOURNAL were issued and mailed on time. We hope its content has been of interest and value to all. We do know that this volume of the JOURNAL (Volume XXXII) contains scientific papers on a wide variety of subjects; a large number of abstracts on scientific subjects drawn from a wide field of medical literature. It contains news notes and comments of interest. It contains society proceedings. It contains news items from the Woman's Auxiliary. It carries a full quota of high-class advertising matter of interest to all, and last, but not least, it contains editorials on topics of general interest to the profession.

We have attempted to give the JOURNAL the highest scientific merit that is compatible with all the purposes such a publication must serve. It is, as you know, an organization, not a purely scientific publication.

As stated, our advertising pages are filled with advertising matter of high quality. We have not accepted all the advertising submitted for the reason we observe the ethical standards set up to govern such matters. Notwithstanding this fact, our advertising yielded a revenue to the Association of \$5,652.83 in the year 1939. This lacks only \$83.17 of covering the entire salary budget of the Association.

Committee Activities

This House is aware of having created a number of new committees. We now have a total of sixteen standing interim committees which perform important functions.

The reports of these committees to the House will give a definite indication of the scope of activities carried on by the Association and something of the vital character of these activities.

It might be worth while to look backward for just a moment and pass upon the wisdom of actions taken a few years ago as viewed from the hindsight instead of the foresight.

The matter of postgraduate education was becoming a subject of increasing concern to all. We foresaw that it would be necessary for us to have more revenue if such activities were undertaken. Steps were taken to increase the income of the Association. The response to that policy was wholehearted. This made it possible for the Association to join up in a cooperative effort to carry postgraduate education to the practitioners of the state in their respective communities. This particular project has been carried forward with such efficiency and with such fine results that there is every indication it will become a prominent activity covering all the subjects of medicine and surgery as time goes on. It might be of interest to state also that we have had correspondence with a number of states who are interested to find out just how the project was organized and how it has been carried forward.

General Duties of the Office

It is needless for me to state to you the fact that the duties of the headquarters office have multiplied in the last few years at an enormous rate.

Numerous movements have been inaugurated in this country which threaten the continued existence of the private practice of medicine. They have required much effort and time.

The matter of keeping informed is a task of some magnitude and the matter of attempting to inform others is a task of equal magnitude, but it is a task which could not be neglected.

It has been necessary that the organization as a whole be kept informed and alert, and I have the feeling that this effort has been successful.

I have encroached upon your time to mention briefly some of these developments in order to impress upon you and finally upon your constituents the fact that we have in Tennessee at the present time one of the best and most actively functioning state medical organizations in these United States of similar size, and that these activities are carried on at the minimum of cost to the profession.

As a matter of fact, the entire expenditure of this Association for salaries is much less than the single salary of any one executive secretary which I know anything about.

For this Association to be what it is, and to have achieved what it has, has required sound leadership, considerable sacrifice, and the hearty coopera-

tion of the entire membership, all of which, in my opinion, this organization has enjoyed.

Respectfully submitted,

H. H. SHOULDERS, Secretary-Editor.

April 9, 1940.

THE SPEAKER: Referred to the Committee on Reports of Officers.

We will skip the councilors for this afternoon and go to the Standing and Special Committees. The first committee is that on scientific work.

COMMITTEE ON SCIENTIFIC WORK

SECRETARY SHOULDERS: Mr. Speaker, as chairman of the Committee on Scientific Work, we submit the program of this session as evidence of our activity.

THE SPEAKER: State Tuberculosis Commission, Dr. Rude.

Dr. W. S. Rude read the report of the State Tuberculosis Commission.

REPORT OF STATE TUBERCULOSIS COMMISSION

Mr. Speaker and Members of the House:

At the last meeting of this body the State Tuberculosis Commission reported that it had been active in cooperation with the State Department of Public Health and the State Tuberculosis Association in securing an appropriation by the General Assembly of \$100,000.00 for the purpose of matching federal, county, and other available funds in the control of tuberculosis. This was the first specific appropriation for tuberculosis control in the history of the state. The bill specified that it was to be spent for the hospitalization of the *indigent tuberculous*. Subsequent to the making of this appropriation the governor appointed an advisory committee to five physicians to assist the Department of Public Health in the formulation of a statewide control program. Three of this advisory committee are members of the State Tuberculosis Commission. This committee has met in conference with Dr. W. C. Williams, commissioner of health, and Dr. W. W. Hubbard, director of the Tuberculosis Hospitalization Program every three months since July, 1939.

Available funds permitted the combining of the diagnostic service already existing with the hospitalization program. All work has been done with the full cooperation of the various county medical societies. Twenty-five county societies have appointed tuberculosis committees to assist in carrying out this work in a manner satisfactory to the profession.

Tuberculin testing of high school children has been completed in fifty-six counties with a total of 33,034 tests given. About eleven per cent have had a positive reaction and nine-tenths per cent of those tested have shown significant lesions when X-rayed. About 100 indigent patients have been hospitalized for collapse treatment and others are being hospitalized as rapidly as county funds are made available. There is increasing interest

being displayed in the tuberculosis control program. Satisfactory progress has already been made towards a solution of this great public health problem in our state. This committee urges that the House of Delegates go on record as favoring a continuation of this program during 1941 and 1942.

Respectfully submitted,
W. S. RUDE, M.D., Chairman.
O. N. BRYAN, M.D., Nashville.
C. M. OBERSCHMIDT, M.D., Memphis.
J. L. HAMILTON, M.D., Chattanooga.

THE SPEAKER: That is referred to the Committee on Reports of Committees.

The next is the Hospital Committee, Dr. E. G. Wood.

Dr. E. G. Wood read the report of the Hospital Committee.

REPORT OF HOSPITAL COMMITTEE

The Hospital Committee has not been as active for the past year as of the year previous, due to the fact there has been no joint meetings with the Hospital Committee from the State Hospital Association. Consequently your committee does not have any further report on the perfecting of a statute relative to Nonprofit Hospital Insurance organization. However, we have not failed to follow carefully the question of Hospitalization Insurance. Needless to say, during the last year there has been a vast amount of such insurance written "some good and some bad." We have further observed the great increase in the so-called Industrial Groups whereby these employees, when taken ill and hospitalized for sickness, injuries, or operative procedures, are allowed in addition to their prorata pay envelopes also a daily amount for their hospital care and certain specified sums, say for different operations performed by surgeons. However, we feel that there may be lurking therein just a little danger signal in that we are certainly being "dictated" as to charge limits. So that the patient right away may and does at times get the idea: "well anyway that is all my operation should cost me." Your committee desires to call your attention to the Hospital Medical Library suggestions as prepared by the Council on Medical Education and Hospitals of the American Medical Association (March 30, 1940, issue of the *Journal of American Medical Association*), also you will find it most interesting to observe the complete work done on Hospital Service throughout the whole United States in this same issue, all arranged in detail according to agencies concerned and types of service. Attention is called to the extraordinary completeness of the hospital data presented by the council. These have been prepared on the basis of actual returns from institutions which maintain 99.6 per cent of the beds in registered hospitals.

Let us not sit idly by and forget that there is today considerable agitation for a complete state

system of hospital service. Governmentally-minded persons in their agitation for a discontinuance of voluntary hospitals urge that complete administration by the state would free many people from personal annoyances. On the other hand, persons who are interested in hospitals from the viewpoint of professional relationships might feel that the benefits to be derived from freedom of action are worth considerably more than any annoyances arising from the existence of the voluntary system. Certainly does Mrs. A. V. J. Hinds of Great Britain think so after her experiences with entering into a certain proportion of state service. Sentiment alone might well be sufficient to urge support because an altruistic people has always recognized that the care of the sick is a fundamental spiritual motive. But here now are conclusive arguments to support the appeal to sentiment with an appeal to reason, one which every free citizen of a free-minded country must heed if he would sustain those institutions which are in themselves a symbol of freedom.

And finally allow us to call your attention to trends of cost in hospitalization, gradually curving upward. An increase in patient day costs from \$1.32 in 1899 to \$5.04 in 1939 is obviously of sufficient significance to warrant an attempt to discover and to analyze its elements. To me, it seems that such an analysis might provide some valuable assistance in planning for the cost of prepayment schemes of hospitalization in the future, and might also reveal the causes responsible for this mounting cost.

E. G. WOOD, Chairman.
E. H. BAIRD.
L. E. COOLIDGE.

THE SPEAKER: Referred to the Committee on Reports of Committees.

The next is the Committee on Public Policy and Legislation, Dr. Edwards.

Dr. L. W. Edwards read the report of the Committee on Public Policy and Legislation with the following interpolations:

REPORT OF LEGISLATIVE COMMITTEE

Mr. Speaker, there has not been a meeting of the Legislative Committee since the meeting held in Jackson last April.

You will recall at that time we made a report of the work done by the committee during the last legislative session. In that report we stated that a bill creating a Department of Medical Care in the Public Health Department had been enacted, that the Basic Science Act was withheld because it appeared that the federal government might be in a position to turn over to the state certain funds for medical care of the indigent, which, we thought, should be supervised by a Medical Department of the Public Health Service.

Our Commissioner of Public Health agreed that this law should be enacted because it would relieve his department of a service which the Department

of Public Health is not properly prepared to supervise.

Your committee recommends that the Basic Science Act be introduced at the beginning of the next legislature, and the bill is drawn and ready for action as soon as the legislature convenes in 1941.

This Act creates a Board known as the Basic Science Board of Examiners, consisting of five members to be appointed by the governor and selected because of their special knowledge of the subjects included. It is provided that the members of this board are to be men who are not engaged in the practice of any form of the healing art.

I have contacted the various departments of some of the schools in the state, and have been assured that men would be available from the Departments of Anatomy, Physiology, Bacteriology, Pathology, and Chemistry to serve on this board.

We think a board composed of men who are not engaged in any form of practice, but who are teachers of these subjects would make a stronger board and one that would be equally fair to the various groups taking examinations.

Mr. Speaker, I would like to file as Exhibit A with this report a copy of this Basic Science Act that has been drawn for the Committee on Reports of Committees to abstract and make recommendations back to this House as to approval or rejection.

It is going to require a thorough system of campaigning, contacting the legislative candidates throughout the state, and this is more than any legislative committee alone can accomplish.

It will require the help and cooperation of members in every county in the state to contact and commit the prospective legislators before they are elected. This was successfully done in passing the Public Health Act some years ago.

On March 25, 1940, we received a letter from J. W. Holloway, Jr., acting director of the Bureau of Legal Medicine and Legislation of the American Medical Association, advising us of a bill introduced in the House of Representatives by Representative Tolan of California, giving the chiropractors the right to treat injured federal employees who are entitled to the benefits of the United States Employees Compensation Act.

The bill was then in the House Committee on the Judiciary. He enclosed a list of the members composing this committee in which one of our representatives, Estes Kefauver, from East Tennessee, is a member. We immediately wrote Mr. Kefauver, setting forth our objections to this bill and reasons for protesting it, and asked him to use his influence in defeating it.

On April 1 we received a reply from Mr. Kefauver thanking us for calling his attention to House Bill No. 8963, and saying he was glad to have our views and was expecting to give the bill careful consideration.

During the last session of the legislature an amendment to the Osteopathic Practice Act was

introduced by Senator Brown of Shelby and Senator Newman of Davidson County. This amendment allows the osteopaths certain privileges such as prescribing drugs, including narcotics, in the regular way. As soon as this bill was discovered, we made a protest to Senators Brown and Newman, calling their attention to that particular section of the bill, and in conversation with these gentlemen they both claimed not to know that this particular section was in the bill, assured me it should not be, and with their pencils, in my presence, marked it out of the bill; and, furthermore, gave me their word that it would be eliminated from the bill before passage. At the last meeting of this House I, as chairman of this committee, was asked for a report on this particular bill, and at that time still thought that the bill had been revised, omitting that section. This was just at the end of the legislative session, and I had not had a chance to investigate the Act, but later, to my surprise, I found that these gentlemen had double-crossed our committee and passed the Act in its original form.

At that time the committee was particularly busy in passing our legislation and in defeating a very pernicious naturopathic bill, which we succeeded in doing.

I am not claiming any alibis for my committee for not defeating the section in the osteopathic bill that should have been defeated, but simply making an explanation of what actually happened. We took their word and thought, of course, that they would make the change, which they did not.

After having served on the Legislative Committee through several legislative sessions, we are convinced that more aid will have to be given the committee in the form of funds, and also to leave to the committee the power to make certain changes from time to time while the legislature is in session.

Respectfully submitted,

L. W. EDWARDS, Chairman.

H. B. EVERETT.

FRANK HARRIS.

THE SPEAKER: Referred to the Committee on Reports of Committees.

The Insurance Committee, Dr. A. F. Cooper.

DR. C. M. HAMILTON: Doctor Cooper is chairman of the Insurance Committee, but he was unable to be here, so he asked me to read his report.

Doctor Hamilton read the report of the Insurance Committee.

REPORT OF INSURANCE COMMITTEE

House of Delegates of the Tennessee State Medical Association.

Gentlemen: As chairman of your Insurance Committee, I herewith submit our report in regard to the group accident and illness coverage carried in the National Casualty Company of Detroit by members of this Association.

My report of last year showed there were over ninety policies in force. When this report was printed in the December issue of the JOURNAL, it

showed that 105 policies were in force. The reason for this was that the J. O. Tankard Insurance Agency of Nashville, which represents the company just mentioned, suggested to the JOURNAL that a footnote be added reading "since increased to 105." By some mistake the number, 105, was incorporated in the body of the report. There are at present, however, 103 members of the Association enrolled under this group policy.

During the year, April 1, 1939, to April 1, 1940, the company has paid thirty claims in the total amount of \$2,332.11, an average of \$77.74. So far as our information goes, all settlements, and other relations with the company, have been entirely satisfactory. Mr. W. M. Tankard of the agency above mentioned tells me it is their plan to inaugurate a campaign in the near future to secure new members for the group. The matter shall be presented to all members of the Association by mail, and personal calls will be made upon as many as possible. The agency has advertised in each issue of the JOURNAL and Mr. Tankard states it shall continue to do so.

We urge that all our members investigate this opportunity to insure themselves against disability by accident and illness very thoroughly before they go into some other company. We are entirely convinced it is altogether reliable and worthy of their support.

A. F. COOPER, Chairman.
S. R. MILLER.
C. M. HAMILTON.

THE SPEAKER: Referred to the Committee on Reports of Committees.

Committee on Education, Dr. Marsh Frere.

Dr. Frere read the report of the Committee on Education

REPORT OF COMMITTEE ON MEDICAL EDUCATION

Mr. Chairman and Delegates: Your Committee on Medical Education has continued to urge immunization against preventable diseases and to request that each county medical society have separate programs dealing with cancer, tuberculosis, syphilis, and other health matters. We in Chattanooga have a very active Health Council and the members of our local Medical Society cooperate with this council in every way possible. I quote from a recent letter received from Mrs. Lapsley Hope, executive secretary of the Chattanooga Health Council:

"It will probably be of interest to you and your associates to know that this year a hundred physicians have accepted the council's invitation as available speakers in our health education program."

One example of another accomplishment of the Health Council working in conjunction with representatives appointed by the Chattanooga and Hamilton County Medical Society was the origination of the Tuberculosis Ordinance, which was passed November 14, 1939.

Dr. J. R. Reinberger, chairman of the Committee on Maternal Welfare and Dr. Frazier Binns, chairman of the Committee on Child Welfare, have not sent in a report on the accomplishments of their committees. However, I feel sure that they have been functioning and will make a report in detail to the House of Delegates.

Dr. W. S. Rude, chairman of the Committee on Tuberculosis, reports that his committee has been active during the year. They have communicated with all the county medical societies of the state and have requested that a tuberculosis committee be appointed in each county. To date, fourteen counties have complied with his request and other counties will appoint these committees as soon as they meet.

Dr. Ralph Monger, chairman of the Cancer Committee, informs me that the Women's Field Army, which is under the direction of the Cancer Committee of the state societies, is carrying on throughout the state and is doing a good work. He also informs me that Chattanooga, which recently went over the top in their funds for the cancer drive, is leading the state in this respect.

Dr. John M. Lee, chairman of the Committee on Postgraduate Instruction in Pediatrics, will make a detailed report to you, but suffice it to say here that about 650 doctors have enrolled for the course, 116 nurses have attended, and at some thirty meetings for laymen the attendance has been about 5,000.

Dr. Cecil E. Newell, chairman of the Committee on Industrial Hygiene, states that his committee has been in constant contact with the American Medical Association's Council of Industrial Health and that they are still in their organization state.

As this is my final report as chairman of the Education Committee, I wish to thank each chairman of the committees that are doing educational work, as well as each member of my committee, for his earnest cooperation throughout my chairmanship.

Respectfully submitted,
J. MARSH FRERE, M.D., Chattanooga,
Chairman.
J. M. LEE, M.D., Nashville.
W. C. CHANEY, M.D., Memphis.
R. B. WOOD, M.D., Knoxville.
H. B. GOTTEN, M.D., Memphis.
D. W. SMITH, M.D., Nashville.

THE SPEAKER: Referred to the Committee on Reports of Committees.

Liaison Committee, Dr. W. C. Dixon.

SECRETARY SHOULDERS: Mr. Speaker, Doctor Dixon had to be in the general session this afternoon. He asked that I submit this report for him.

Secretary Shoulders read the report of the Liaison Committee.

REPORT OF LIAISON COMMITTEE

Nothing has been referred to the Liaison Committee for consideration during the past year, consequently no meeting has been held and we have nothing to report.

W. C. DIXON, Chairman.

THE SPEAKER: Referred to the Committee on Reports of Committees.

Committee on Memoirs, Dr. H. M. Tigert, chairman. (Absent.) Committee on Maternal Welfare, Doctor Reinberger. (Absent.) Committee on Child Welfare, Dr. Frazier Binns. (Absent.) Cancer Committee, Dr. Ralph Monger, chairman.

REPORT OF THE CANCER COMMITTEE

DR. MONGER: Mr. Speaker, the work of the Cancer Committee has been a continuation of the program outlined before the House of Delegates about four years ago. The function of this committee is primarily educational. We have the state fairly well organized. Through the Women's Field Army, we try to send speakers to various lay organizations and stress the danger signals of cancer before these different organizations.

I am sure that if this work continues there will be more individuals coming to you for suspected cancer. In order to make the physician more lay-minded, last year at the state meeting at Jackson the Cancer Committee published 1,000 volumes of the cancer manual as edited by the Ohio State Cancer Committee, and each physician who registered at Jackson was presented with one of these manuals.

Starting three years ago with nothing, I do not know exactly what we have in the treasury, but we have something over \$1,400 in our treasury now to continue the work on education in cancer throughout the state.

We have not had a meeting since last year at Knoxville, but we are going to have a meeting tomorrow morning at 8:00 o'clock, and we expect to continue the program.

THE SPEAKER: Referred to the Committee on Reports of Committees.

Committee on Physical Therapy, Dr. J. F. Hamilton.

Dr. J. F. Hamilton read the report of the Committee on Physical Therapy.

REPORT OF COMMITTEE ON PHYSICAL THERAPY

I am submitting herewith a report from the Committee on Physical Therapy.

I regret that I am unable to give you a concrete report. The committee has not had a meeting, but considerable correspondence has been carried on lately among the members of the committee regarding the matter of trying to do something toward establishing a registry for physiotheraputists in the state. Data has been secured from the Council on Physical Therapy of the American Medical Association, and opinions from each member of your committee pertaining to this field of work. I feel

all of your committee are interested in this matter, and we trust before another year passes we may be able to offer some definite suggestions along the line of officially recognizing people who practice the art of physical therapy.

Respectfully submitted,

A. H. MEYER, M.D., Memphis.

R. C. ROBERTSON, M.D., Chattanooga.

ROBERT PATTERSON, M.D., Knoxville.

J. J. ASHBY, M.D., Nashville.

J. F. HAMILTON, M.D., Chairman,
Memphis.

THE SPEAKER: Referred to the Committee on Reports of Committees.

Committee on Industrial Hygiene, Dr. Cecil E. Newell.

Doctor Newell read the report of the Committee on Industrial Hygiene.

REPORT OF COMMITTEE ON INDUSTRIAL HYGIENE

Gentlemen: The Committee on Industrial Hygiene, in its second year of organization, has increased its activities. Not only has it been in constant contact with the American Medical Association's Council of Industrial Health, but it has so far acquiesced to each request for aid and information which the council has asked of the committee regarding local or state conditions.

The committee's files and correspondence has greatly increased in an endeavor to obtain more information concerning the various aspects and problems confronting us or expected of the committee. Contact is being established with the thirty-three other state committees, as well as other industrial health organizations, in an attempt to find out what they are proposing and accomplishing.

A card index is being made by the committee of each of the 3,000 physicians in Tennessee. It is our earnest hope that within the coming year, finances shall be allotted the committee so that we can write to every physician in the state asking his present relation to industrial health, and thereby classify every doctor within the state.

1. Full-time industrial physician.
2. Part-time industrial physician.
3. On call industrial physician.
4. Insurance examiner.
5. No industrial work.

We expect to gain additional information by a canvass of the Chamber of Commerce to obtain a list of their members maintaining medical and first-aid departments.

We feel that by thus indexing the physicians of the state, and finding out just who are the industrial physicians, that we shall have made our first real step in our industrial hygiene program. The minimum cost of such an undertaking is \$52.00. What is your pleasure?

This committee wishes to suggest to the House that if and when an extension course in internal

medicine is begun in this state by the Commonwealth Fund that an effort be made for it to include several lectures on industrial hygiene.

It is our feeling that we, as a committee, can function best if similar committees are organized in every county society. Other states are leading us in this move. We see no reason why we should not fall in line.

Each year in January the American Medical Association holds a Congress of Industrial Health in Chicago. At its first meeting in 1939 the chairman of this committee attended. At the 1940 meeting our committee was not represented. This lack of representation was officially deplored by the American Medical Association. Does the House wish to appropriate expenses for a delegate from this committee to attend these annual congresses?

CECIL E. NEWELL, M.D., Chairman.

C. F. N. SCHRAM, M.D.

A. R. McMAHAN, M.D.

E. L. RIPPY, M.D.

THE SPEAKER: Referred to the Committee on Reports of Committees.

Committee on Fractures, Dr. Duncan Eve.

Doctor Eve read the report of the Committee on Fractures.

REPORT OF COMMITTEE ON FRACTURES

To the House of Delegates:

As customary, we still put on a fracture exhibit and have several papers on the subject of fractures on the program at our annual meetings. Each year several articles on fractures are published in the principal newspapers of the states.

One phase of the fracture problem that was touched upon by your committee was the necessity for improved methods of teaching in the medical schools. The leaders in fracture treatment recognize the fact that instruction of graduates in this field has been somewhat neglected. It is generally admitted that modern principles of fracture treatment call for postgraduate study and instruction.

First Aid and Transportation of Fractures.—Among the specific aims of your committee may be mentioned the more general use of improved methods of first aid and transportation of fracture cases—a field that is now engaging the attention of the American Red Cross Society and the Safety Promotion Departments of the motor vehicle bureaus of some of our states. The general public are gradually awakening to the need of proper transportation for fractures from the scene of the accident.

Regulations are being passed governing the minimum requirements of equipment and of operation of ambulances. In this connection the Safety Promotion Section of the Department of Motor Vehicles of the State of Connecticut has issued a bulletin which instructs laymen to avoid moving an injured person until skilled aid arrives. This is also carried out in many cities in the West.

It is hoped that our state will follow the splendid example set by the State of Connecticut and other

states cautioning against the careless handling of fracture cases.

DUNCAN EVE, Chairman.

J. PAUL JOHNSON.

Committee on Fractures.

THE SPEAKER: Referred to the Committee on Reports of Committees.

We will now hear from Doctor Lee, the Committee on Postgraduate Instruction.

Dr. John M. Lee read the report of the Committee on Postgraduate Instruction in Pediatrics.

REPORT OF COMMITTEE ON POSTGRADUATE INSTRUCTION IN PEDIATRICS

To the House of Delegates of the Tennessee State Medical Association:

The postgraduate course in pediatrics, sponsored and directed by the Tennessee State Medical Association and aided financially by the Commonwealth Fund, the Tennessee State Department of Health, and the medical schools of Vanderbilt University and the University of Tennessee, has been conducted in the past year as scheduled. You will recall that instruction began February 1, 1939, and to date lectures have been given in six circuits of five teaching centers each. In addition, the course has been given to two groups of negro doctors, twenty-five enrolling in Memphis and twenty-three in Nashville. There have also been additional negro doctors who took the lectures with the county societies where that was agreeable to the societies. The remainder of the state will be covered in three additional circuits of five centers each, the program being completed in January, 1941.

From the beginning of the course to date, 644 doctors have enrolled and more than a hundred nurses have attended the lectures as guests of the State Medical Association. Since this report was written, the number enrolled in the next course has been added, bringing the total enrollment up to the neighborhood of 700 doctors who have taken the course in pediatrics. That compares, we think, very favorably with the former course in obstetrics, in which course up to this stage about 900 had enrolled. We had anticipated fewer enrollments in pediatrics than in obstetrics. There have been thirty lectures to lay groups which had an estimated attendance of 5,027.

All contributing agencies made appropriations necessary to the completion of the two-year program. An audit of the books and records of the committee by a licensed public accountant as of March 30, 1940, showed that there is a surplus of cash on deposit and that our expenditures have been much less than the estimated budgetary requirements. From these figures and from our estimates of expenses required, it appears that the program will be completed with a surplus of funds to be returned pro rata to the contributing agencies—a surplus of several thousand dollars.

An exhibit showing the progress of postgraduate study in Tennessee was prepared and entered in

the section for scientific exhibits at the meeting of the American Medical Association in St. Louis in April, 1939. Many visitors from all parts of the United States examined this presentation and inquired into the details of this activity. Since this meeting numerous inquiries concerning our method of conducting medical extension study have been received from all sections of the nation. Our exhibit material is being revised and brought up to date and will be shown at the meeting of the American Medical Association in New York City in June of this year.

With the authority voted them by this House of Delegates at the meeting in Jackson, Tennessee, in April, 1939, the Board of Trustees voted that the Committee on Postgraduate Instruction be authorized to conduct preliminary arrangements for providing the doctors of the state with an extension course in internal medicine to be given after the completion of the present course in pediatrics. The four participating agencies in the state have all voted to cooperate in such a program and aid financially to the same extent that they have aided in the two previous courses. The Commonwealth Fund replied that they would be favorably inclined to granting aid to such a program, but that final action on our request could not be taken until the meeting of their Board of Directors this fall. Since their contribution is the largest and the determining aid to be obtained, final plans for this course are held in abeyance pending their decision. However, your committee is proceeding with tentative preliminary search for an instructor and the consideration of the subject matter to be given in the program.

Your committee wishes to commend most highly the clinical instructor in pediatrics, Dr. Willis H. Thompson, who has worked hard and faithfully to make this course a success. Our thanks are due and now expressed to Mr. Kibler, field director, and Mrs. Josephine Tate, secretary, for their most loyal and efficient efforts on behalf of this program. The officers, employees, and members of the association have been most generous in their aid and counsel to the committee, for which we are deeply grateful.

This is your program which your committee is striving to present in the best possible manner and we welcome constructive criticism and suggestions at all times.

Respectfully submitted,

JOHN M. LEE, M.D., Chairman,
Committee on Postgraduate Instruction in
Pediatrics.

THE SPEAKER: Referred to the Committee on Reports of Committees.

We will now hear the report of the delegates to the American Medical Association.

REPORT OF DELEGATES TO THE A. M. A.

DR. EVERETT: Mr. Speaker, at our meeting last year there was a resolution adopted requesting the delegates to the American Medical Association

to prepare their report in advance of this meeting and submit it to the Secretary-Editor for publication in the JOURNAL OF THE TENNESSEE STATE MEDICAL ASSOCIATION so that the members might have an opportunity to study this report before this meeting.

I now wish to present the report as published in the October issue of the JOURNAL on pages 362, 363, and 364, and move the adoption of this report as printed as the delegates' report.

DR. E. G. WOOD: I support it.

The motion was put to a vote and carried.

ADDRESS BY DOCTOR VAN ETEN

THE SPEAKER: Gentlemen, at this time we have a very distinguished guest with us. We feel highly honored by his visit to us. I am going to ask Doctor Shoulders to introduce him.

SECRETARY SHOULDERS: Mr. Speaker, we are honored by the presence of a distinguished visitor. It has been my privilege to have intimate contact with him. He was my predecessor as Speaker of the House of Delegates of the American Medical Association.

It has been my privilege to know something of his history. In the first place, I think he would feel perfectly at home here with us. In other words, he has worked in all of the capacities in organized medicine from the humblest committee to the head of it.

The American Medical Association House of Delegates, I think, has quit placing people in the position of President or President-elect, who have not familiarized themselves with the duties and responsibilities of leadership in organized medicine. Their prominence in some single field, we found, poorly fits them for the office of President and President-elect.

It is my very great pleasure to present to you now Dr. Nathan Van Etten of New York, President-elect of the American Medical Association.

The audience arose and applauded.

DR. NATHAN B. VAN ETEN: Mr. Speaker, it is indeed a privilege to be permitted to address this House of Delegates. I have long known your representatives in the House of Delegates of the American Medical Association, one of whom is the distinguished speaker as well as a raconteur par excellence.

Tennessee has always been depended upon for intelligent conservatism, as well as for all progressive legislation, in that House.

Last year at St. Louis the House adopted basic resolutions, upon which were constructed the new national program of the American Medical Association. Every word of that program is objective. The false accusations that the American Medical Association is static and reactionary are sharply denied in the letter and spirit of that forward-looking declaration.

Two thoughts are expressed in the platform which may seem sharply contradictory—one is *centralization* of all governmental health activities in

one new National Health Department, and the other *decentralization* of all other health activities into local units of administration.

Coordination of governmental health activities is simply a practical move to do away with much overlapping expense and reduction of duplicating machinery.

Developing local health units may be a device to find sickness where it is and treat it on the spot, shorten governmental procedures and keep the government out of medical practices.

Wherever local problems can be solved, they lessen the mass of national responsibility. If we settle minor problems we shall have few major problems.

The platform deals in generalities. Specific provisions for detailed development will have to be studied with care by all who are interested, such as the professions of medicine, public health nursing, and welfare organizations. A great deal of laboratory work is needed. Suggestions might well be made by legislative bodies such as yours. Although the program evolved from the action of the National House of Delegates, perhaps it might be well to have it referred to one of your reference committees on Public Relations for study at this session—or an expression of opinion by your delegates.

Although the Wagner Health Bill is still resting in the Committee on Education of the senate, where it is supposed to be undergoing revision, it is not likely to appear at this session of congress. In fact, Senator Wagner stated publicly at a meeting in New York on March 28 that revision of the bill was proceeding to harmonize it with the ideas of the American Medical Association. Exactly what is meant by that statement is not known, but it is certain that Senate Bill 1620 has been sidetracked to allow precedence of the President's program for small hospitals.

It is not enough, however, to merely declare a set of proposals. Something must be done to stimulate action.

General activity to stimulate legislation forming a National Health Department under a Secretary of Health must proceed if the medical profession really desires it. Local work must proceed in our county medical societies to promote local action.

It would be ideal if all county societies would start a study of the local needs for medical service. There must be wide divergence of local conditions. The character of terrain—hilly country, flat country, good or bad roads, bridges over rivers, general accessibility of doctors and hospitals. Much might be done if there was enough ambulance service at strategic points. I learned very early in my career from my father, who was a railroad surgeon, that patients who were very sick could endure a good deal of transportation.

When Herman Biggs was Health Commissioner of the State of New York, he advocated a system of cottage hospitals and laboratories to take care of the rural problem in the State of New York. At

a hearing before Governor Smith everybody seemed to favor the project. When the governor said he would like to hear what some country doctor thought about it, finally a doctor from Malone, a town in the northern part of the Adirondacks, arose and said: "Well, Governor, in the summertime the Adirondack region is full of city people and there are plenty of city doctors to take care of them, but in winter very few people are there and the country doctors and country towns have plenty of facilities. All we ask you to do, Governor, is to keep the roads open."

The cottage hospitals were not built. Good roads in the State of New York have largely eliminated the rural problem. There is now a doctor in New York State within thirty minutes of every citizen.

Every county society should be interested to make these studies sincerely. It is important to know whether the county needs hospitals, ambulances, doctors, nurses or welfare workers—whether it can take care of itself or needs state or national financial help.

I presume that doctors in Tennessee are just as much or as little concerned in general health problems, are just as generous or as selfish as doctors in other parts of our country. I presume that in each of your counties a *few* doctors do all the work of your county societies and the others are perfectly willing to let them do it.

Of course, you gentlemen here today are the workers of the Tennessee State Medical Society. I wonder if you take yourselves seriously enough to carry back to every doctor in your counties the real importance for the cooperation of every one of them, if we are to bring American medicine to its rightful place in American life.

Every doctor in Tennessee should be a citizen in every sense of what citizenship means or implies.

The general practitioner must be revitalized into active leadership of all political movements concerned with the moral, mental, and physical welfare of every citizen of this important state.

We must not take negative positions at a time like this when all sorts of wild theorists are shouting into the public ear. The public seem to be eager for health education and we must give it to them honestly and freely if we really want America to be a better and happier place in which to live.

(Applause.)

THE SPEAKER: We have had twelve reports which have covered a wide field of work in this society. They have been most excellent reports all the way through.

COUNCILORS' REPORTS

The next thing on the order of business is the reports of the councilors. The First District, Doctor Dyer.

First District

DR. L. E. DYER: Mr. Speaker and Members of the House: The First District of this state comprises eleven East Tennessee counties. The counties with organized societies include Greene, Carter, Cocke, Sullivan-Johnson, Unicoi, and Washington.

The societies, as a whole, have done excellent work throughout the year and have had splendid meetings. One or two impressive things, I think, for these societies have been the regular attendance, showing that the interest has not waned any with these organized societies. As we know, during the last year, there has been a great deal of propaganda, there has been a great deal of effort on the part of people to help disorganize medical effort, particularly organized effort.

It was interesting to learn from our Secretary's report this afternoon that we had not lost any of the organized societies and that their membership had been maintained through one of the most difficult years that we have had.

The reports from the counties in the First District will show that the attendance has been as good, or perhaps a little better, than the corresponding report of last year, which shows that nothing has been able to counteract the organized efforts to have regular meetings and take an active part in these societies.

Fortunately, we have had an increase in membership from each county. We have only had two deaths in this district, showing that we are holding our own from the point of membership and also from the point of attendance.

On the whole, I think the work of each individual local society has really been excellent. I will not take time to read the attendance record, but, for instance, one of the small societies, with only seven members, has had an average attendance of six. This is one of the small counties. That shows the interest that each individual is taking in the program that has been given almost each month throughout the year.

We have two or three counties that are not organized. The reason for that is they are in mountainous counties with only two, three or four doctors in the county. Those doctors have been given invitations to attend the closest organized society, thereby having an opportunity to hear the programs as they have been given by the various county societies.

THE SPEAKER: The Second District, Doctor Miller.

Second District

DR. S. R. MILLER: Mr. Speaker, the secretaries have not been very good at reporting to the Councilor, although every one of them was written. We have only had one death reported. We have had a gain of six members in the smaller counties. Even though Dr. Jesse Hill's county did not report to the Councilor, I understood from the Secretary they advised there was no society with less than twenty-five members.

SECRETARY SHOULDERS: Combinations took place to build them up to that.

DR. MILLER: The Council had a meeting last year and decided to try to get counties to unite until they would have a membership of twenty-five or thirty. We are having good roads everywhere

now and we ought to do it. If you talk to members, especially the indifferent ones, they say: "Well, it might be all right, but I don't believe those other fellows would come to our society."

I say: "How about your counties going to the other fellow?"

"We don't know."

So you cannot get them to do it. We felt like Sherman when he was talking about the East Tennesseans. He said: "Those East Tennesseans, if you treat them right, you can lead them; but the devil in hell cannot drive them anywhere." We did not feel that it was a good plan to try to drive them into one society. In my opinion, the solution of the whole problem means to get more societies together where they have a sufficient membership. Some of our societies have an average of six or seven members. That isn't enough to have any interest in the society.

One society, though it is organized and reports, I think, to the Secretary (I cannot get any answers to letters there) only meet and organize enough to appoint a president and a secretary. They don't have any scientific programs at all.

In my district we have only had a few problems come up during the last year. There was one ethical problem, in which one of the older members was turned out for having a trademark preparation, but I think we will get that straightened out soon.

The American Medical Association has come to the Councilor for information concerning some hospitals, new and small hospitals. I was able to give them the information on some of them, but one of the hospitals I had to visit. Talk about your little hospitals, it was an ideal model of a hospital, built through public funds, county funds, and doctors' funds. It was an ideal hospital. I was very glad to make a report of that kind to the American Medical Association.

Altogether, we have had a slight gain in the Second District and only one death reported so far.

THE SPEAKER: The Third District, Hiram Laws.

Third District

DR. H. A. LAWS: Mr. Chairman, I think a little competition is good in these things. Doctor Dyer made a good report. He reported seven members in one county and an average attendance of six. I can do the same thing. They had twelve scientific papers read there.

Now, then, Doctor Miller speaks of twenty-five members in all. That is all right if we can get twenty-five members in and around these counties to join, but, if not, let us go back to what the Bible says: "Where one or two meet in His name, much can be accomplished." So three or four country doctors can meet in one of these little county seats, if they cannot get twenty-five all around, and do a lot for themselves and for the people in that community. As Doctor Miller said, let us not force them, but if we can coerce them to come in, ask them to come in, that is all right. Let us not force

those old fellows too much because they are setting there and they have been setting for a long time. (Laughter.)

As a whole, there has been a slight increase. We have only lost four men in the fourteen counties that I am reporting for. Three of those were from our local county here, Hamilton County, the other being a man from Franklin County.

There has been no ill feeling so far as I know. I have not been called upon or written to at any time during the year.

I will not take up the fourteen counties individually. I have the reports here. The Secretary asked me to read the names of the three men from our county who had died. They are: Dr. A. W. Gross, Dr. Jasper Reynolds, and Dr. W. J. Winter.

THE SPEAKER: The Fourth District, J. T. Moore.

Fourth District

DR. J. T. MOORE: I did not get reports from all the counties in my district. There are fourteen counties. The counties from which I received reports are: Cumberland, Fentress, Overton, Putnam, Smith, Sumner, and Jackson. I know they have an active medical society at Wilson County, and I expected to get a written report from them up to the very minute I was leaving for the meeting, and I thought I would see some of the men over here.

Some of the counties in this district, small ones such as Clay, Pickett, Rhea, and Trousdale, as far as I know, haven't any active societies. The doctors attend the Five-County Medical Society which meets every two months, six times a year. They haven't gained interest in a county society, cannot have enough men in the meeting.

Cumberland County has six members and has had twelve meetings; Fentress, five members and five meetings; Overton, seven members and three meetings; Putnam, ten members and ten meetings; Smith, nine members and twelve meetings; Sumner, fourteen members and nine meetings; Jackson, just organized since January 1, four doctors and three meetings.

In these seven counties that are reporting, there are fifty-six members. There are fourteen eligible who are not members of our societies. We have had no deaths in this district.

Fifth District

THE SPEAKER: Fifth District, Doctor Sutton. (Absent.) (See statistical table.)

Sixth District

Sixth District, Dr. H. S. Shoulders.

DR. H. S. SHOULDERS: My report is short. All counties are organized except one. I wrote the secretaries of two or three of these counties and did not get a complete reply.

I have not been called upon to settle any difficulties anywhere, and I think we have been going along in very good shape.

THE SPEAKER: Seventh District, Doctor Walton. (Absent.) (See statistical report.)

Eighth District, Doctor Thompson. (Absent.) (See statistical report.)

Ninth District, Doctor Baird.

Ninth District

DR. E. H. BAIRD: Mr. Chairman, I have not summarized this report. There are no changes in my district. I have reports from all counties except one. We have three rather active societies in my district. The others are small and inactive. In the active societies we extend invitations, of course, to the societies where the meetings are regular, and we get some attendance from the smaller societies in the surrounding counties. There has been no loss of membership in my district. In fact, we have had a gain in membership during the past year. We have had one or two deaths which were reported.

The most active society is the combined society of Dyer, Crockett, and Lake. We have more members in there than in all of the counties. There are five eligible who are not members of the society. We have a very active society there, with part local papers and part out-of-town papers at each meeting once a month. We also have a very active society in Gibson County and in Weakley County.

There has been nothing of importance, and no trouble in the district this past year. We have more members than we had last year.

THE SPEAKER: Tenth District, Britt Burns.

Tenth District

DR. W. B. BURNS: Mr. Chairman, Memphis-Shelby County Medical Society has 372 members, including nine veterans and twenty-one associate members. The number residing in the county is about 400. Number of physicians eligible for membership, who are not members of the society, about twenty, in regular practice.

Number of new members during the year: nineteen regular members, ten associates, and one veteran.

Number of members who died during the year two. Those are Dr. Battle Malone and Dr. J. H. Buchanan.

Number of members dropped from membership roll none. Number of meetings of society during the year eighteen. Average attendance at meetings sixty-five.

Number of scientific papers read fifty-seven—papers and case reports.

The president of our local society for 1939 was Dr. J. H. Francis, and for 1940 it is Dr. W. C. Chaney. The secretary is Dr. A. F. Cooper.

There were three deaths this year, which will go in the next report: Dr. C. M. Chilton, Dr. N. S. McDavid, and Dr. S. E. Pincus.

THE SPEAKER: Tomorrow morning we will have the election of Councilors. Those for the odd-numbered districts are to be elected this year: the First, Third, Fifth, Seventh, and Ninth.

STATISTICS OF COUNCILORS' REPORTS

COUNTY and DISTRICT	Members in County	Physicians in County	Eligible Nonmembers	New Members	Died During 1939	Dropped	Society Meetings	Average Attendance	Papers Read
FIRST DISTRICT—									
Carter -----	7	12	5	0	0	1	10	6	11
Cocke -----	9	15	5	0	0	2	12	80%	7
Greene -----	18	22	4	1	1	3	12	10	14
Sullivan- Johnson --	54	73	16	5	1	0	9	31	7
Unicoi -----	5	6	1	0	0	0	8	3	4
Washington--	51	47	4	4	0	0	9	21	12
SECOND DISTRICT—									
Anderson --	11	14	3	1	0	1	12	7	12
Campbell --	25	28	2	3	1	0	11	8.3	5
Hamblen ---	14	13	0	2	0	0	12	10	12
THIRD DISTRICT—									
Bledsoe ----	2	4	0	0	0	0	0	0	0
Bradley ----	13	22	5	1	0	0	9	9	9
Franklin ---	7	12	11	2	1	0	12	6	12
Grundy ----	6	6	0	0	0	0	1	50%	0
Hamilton --	147	183	25	6	3	5	38	66	42
Marion ----	1	6	0	0	0	0	0	0	0
Monroe ----	12	15	3	1	0	2	11	7	14
McMinn ----	18	20	1	2	0	1	8	12	8
Polk -----	6	9	3	0	0	0	1	3	0
Warren ----	0	13	13	0	0	1	0	0	0
White -----	12	14	1	2	0	1	11	5	8
FOURTH DISTRICT—									
Cumberland -	6	8	2	0	0	1	12	4	22
Fentress ---	5	5	0	5	0	0	5	3	0
Overton ----	7	8	1	1	0	0	2	5	0
Putnam ----	10	15	4	1	0	0	10	8	9
Smith -----	9	13	3	0	0	0	12	8	11
Sumner ----	14	24	4	1	0	1	9	10	9
Jackson ----	4	0	0	0	0	0	3	0	0
FIFTH DISTRICT—									
Rutherford--	22	26	5	0	0	2	12	14	12
Lincoln ----	12	18	7	1	0	1	12	7	5
Bedford ----	15	15	2	1	0	3	12	9	11
SIXTH DISTRICT—									
Davidson ---	220	480	100	10	2	8	38	90 to 100	48
Robertson--	19	23	4	1	0	0	11	12	12
EIGHTH DISTRICT—									
Carroll ----	8	14	6	0	2	0	10	8	20
Fayette- Hardeman	15	24	9	3	0	5	8	12-15	14
Henry -----	14	17	3	1	0	1	4	9	5
Madison ---	55	40	0	0	0	4	12	30	21
NINTH DISTRICT—									
Dyer, Lake, and Crockett --	37	47	5	3	1	2	10	30	29
Gibson -----	20	24	4	1	0	0	10	15	20
Haywood ---	12	14	2	1	1	0	12	8	24
Lauderdale -	7	15	7	1	0	1	1	6	0
Weakley ---	10	20	10	0	0	1	12	8	12
TENTH DISTRICT—									
Shelby -----	372	400	20	19	2	0	18	65	57

THE SPEAKER: We will have the report of the Committee on Memoirs. Doctor Tigert is not here.

SECRETARY SHOULDERS: Before reading the report, I would like to read a telegram just received:

My best wishes for a fine meeting of the old Tennessee Medical Association. I can think of nothing that could give me more genuine pleasure than to be there.

OLIN WEST.

(Applause.)

This is the report of the Committee on Memoirs. Doctor Tigert was detained and asked that this go in the regular order and that the House not be delayed. So I will read this report for them for your convenience and his.

Secretary Shoulders read the report of the Committee on Memoirs.

REPORT OF COMMITTEE ON MEMOIRS

In sadness and with deep reverence we report the following deaths since our last meeting:

Dr. J. O. Shannon, Williamson County.

Dr. E. L. Ellis, Blount County.

Dr. W. O. Brickell, Blount County.

Dr. A. L. Lawson, Campbell County.

Dr. J. A. P. Shields, Cocke County.

Dr. A. C. Elinor, Carroll County.

Dr. E. W. Hillsman, Carroll County.

Dr. J. F. Hunt, Dickson County.

Dr. L. D. Allen, DeKalb County.

Dr. Luther Edwards, Dyer County.

Dr. Perry Bromberg, Davidson County.

Dr. R. L. Jones, Davidson County.

Dr. Edward Plotkin, Davidson County.

Dr. G. W. Oliver, Gibson County.

Dr. C. P. Fox, Sr., Greene County.

Dr. A. W. Gross, Hamilton County.

Dr. J. A. Reynolds, Hamilton County.

Dr. W. J. Winter, Hamilton County.

Dr. G. G. Mulherin, Haywood County.

Dr. W. F. Huntsmen, Henderson County.

Dr. J. T. Cooley, Humphreys County.

Dr. Oliver W. Hill, Knox County.

Dr. J. R. Conyers, Lauderdale County.

Dr. C. W. Polk, Lauderdale County.

Dr. W. T. Sharp, Marshall County.

Dr. E. E. Waller, Madison County.

Dr. J. J. Waller, Roane County.

Dr. Wm. Battle Malone, Shelby County.

Dr. J. H. Buchanan, Shelby County.

Dr. N. E. Hartsook, Washington County.

Dr. J. W. Greer, Williamson County.

Dr. Ernest M. Fuqua, Giles County.

Dr. C. H. Morgan, Knox County.

Dr. Carl R. Martin, Knox County.

Dr. Charles Elliott Ristine, Knox County.

Dr. Hugh L. Peters, Knox County.

Dr. J. P. McNeil, Sullivan County.

Dr. Lewis Lowe Neblett, Montgomery County.

Dr. Hilliard Wood Otey, Shelby County.

Dr. W. D. Haggard, Davidson County.

Dr. J. B. Phillips, Hamilton County.

Dr. Bailey Brown Sory, Robertson County.

Dr. M. A. Beasley, Maury County.

Dr. Charles Marshall Chilton, Shelby County.

Dr. William Gaylor, Campbell County.

Dr. Rufus E. Fort, Davidson County.

Dr. R. S. McDavid, Shelby County.

Dr. L. H. Montgomery, Gibson County.

Dr. S. E. Pincus, Shelby County.

Dr. M. A. Schultz, Shelby County.

As was so well said of another who died as they did upon the field of duty, we can truthfully say of each of our departed associates and friends:

When a star is quenched on high,
For ages will its light
Still travel downward from the sky,
Shine on our mortal sight.
So when a good man dies,
For years beyond our ken
The light he leaves behind him lies
Upon the path of men.

H. M. TIGERT, Chairman.

B. T. NOLEN.

J. C. BROOKS.

L. J. LINDSEY.

Committee on Memoirs.

THE SPEAKER: I think, in my whole association with this House, that is the longest list of deaths that we have ever had read.

DR. E. G. WOOD: May I move that we stand for one minute in silent memory of these men?
Silent tribute.

THE SPEAKER: Gentlemen, I suggest that we meet tomorrow morning at 8:00 o'clock. What is the pleasure of the House? I will entertain a motion to that effect.

DR. S. R. MILLER: I move we adjourn until 8:00 o'clock.

DR. E. G. WOOD: I second it.

The motion was put to a vote and carried. The meeting adjourned at 4:15 o'clock.

WEDNESDAY MORNING, APRIL 10, 1940

The second session convened at 8:30 o'clock, Speaker Zemp presiding.

THE SPEAKER: The House will please come to order. We will hear from the Committee on Reports of Committees, Doctor Manier.

COMMITTEE ON REPORTS OF COMMITTEES

DR. MANIER: Mr. Speaker and Members of the House of Delegates: Your Committee on Reports of Committees met and reviewed the various committee reports that were presented to you yesterday with the following results:

First, report of the State Tuberculosis Commission.

Your committee has examined this report and recommends its approval.

I move its adoption.

DR. BURNS: I second it.

The motion was put to a vote and carried.

DR. MANIER: Report of the Hospital Committee.

Your committee has examined this report and recommends its approval.

I move its adoption.

DR. BURNS: I second the motion.

The motion was put to a vote and carried.

DR. MANIER: Report of the Legislative Committee.

Your committee has examined this report and wishes to submit to you the following recommendations in reference to it:

1. That the report be approved by the House of Delegates.

2. That the House of Delegates go on record as instructing the Legislative Committee that, during the next session of the legislature of Tennessee, the enactment of the Basic Science Law be its primary objective and that no other legislation be sponsored until this law has been passed.

3. That the House of Delegates approve the Basic Science Law as drawn, but that the Legislative Committee be empowered to make whatever changes may be found to be expedient to insure passage of the proposed bill, provided such changes do not nullify the spirit or objective of the proposed bill.

4. That the House of Delegates take action to instruct the Board of Trustees and the incoming President to set up at once the necessary machinery to contact and pledge effectively all members of the incoming legislature of the State of Tennessee in order to insure the passage of the proposed Basic Science Law.

5. That the House of Delegates instruct and authorize the Board of Trustees to extend to the Legislative Committee whatever financial aid the Board of Trustees, in its judgment, may deem necessary to secure the passage of the Basic Science Law.

I move the adoption of this report.

DR. SCHRAM (Kingsport): I second it.

The motion was put to a vote and carried.

DR. MANIER: Report of the Insurance Committee.

Your committee has examined this report and recommends its approval.

I move its adoption.

DR. SCHRAM: I second the motion.

The motion was put to a vote and carried.

DR. MANIER: Report of the Committee on Medical Education of the Tennessee State Medical Association.

Your committee has examined this report and recommends its approval.

I move its adoption.

DR. LAWS: I second it.

THE SPEAKER: Any discussion?

The motion was put to a vote and carried.

DR. MANIER: Report of the Liaison Committee.

Your committee has examined this report and recommends its approval.

I move its adoption.

DR. LAWS: I second it.

The motion was put to a vote and carried.

DR. MANIER: Report of the Committee on Industrial Hygiene.

Your committee has reviewed this report and would recommend that, if this committee is to be continued in the future, it should be allowed the funds requested for operating expense, not to exceed \$60.00 per annum. As to whether the Association desires to assume the expense of a delegate

from the Tennessee State Medical Association to the Congress of Industrial Health of the American Medical Association as suggested in the committee's report, your Reference Committee feels that this is a matter for the House of Delegates to decide.

DR. BURNS: You don't recommend it?

DR. MANIER: It is not our particular business to recommend this. We recommend the approval of the report. That does not obligate you, the way this report is written.

THE SPEAKER: Let us take up the approval of the report first.

DR. BURNS: I move the adoption of the report.

DR. LAWS: I second it.

The motion was put to a vote and carried.

THE SPEAKER: Now it is up to the House to say whether they wish to send a delegate.

DR. LAWS: I want to ask what industrial hygiene is, just how far does that go, and how much money this society should spend on it. Does anybody know just exactly what it is?

DR. EVERETT: In making this report yesterday, Doctor Newell stated the expenses to the meeting in Chicago, I believe, were \$52.00.

DR. MANIER: No, that was for taking the census.

DR. EVERETT: I don't believe he stated the amount that was necessary to attend the congress, but this meeting is always held in Chicago, I believe. Of course, you would have the transportation to Chicago and back. It usually lasts two days; I believe that is correct. Just what the expenses would be, I don't know, but it would be just the regular transportation expenses and the expenses while there.

THE SPEAKER: They have fixed the expenses at \$60.00. That is the amount they are asking for.

DR. EVERETT: Of course, this committee cannot very well carry on the work unless they have representation at the meeting because they cannot keep up with it very well.

DR. SCHRAM: I happen to be on the Committee on Industrial Hygiene. As I stated to Doctor Newell yesterday, I feel that this is happening in Tennessee. I am not in private practice, but, for the moment, imagine that I am. I think that we lose certain things because we don't take hold of them as private practitioners of medicine. Your State Board of Health at the present time are getting into industrial hygiene, and you and I ought to be in on it. For instance, let us not have the industries of the state calling upon the State Board of Health to solve their medical problems in industry. Let us have them call in the physician in their own town.

Part of our recommendation was that in your course on internal medicine, in the industrial centers, we have three or four lectures on industrial hygiene, so that when a manufacturer in your home town has a case of dermatitis, has a case of mer-

curial poisoning, has a case of lead poisoning, has a case of silicosis, has a case of poisoning from silver, you men can go over there and take care of the job and solve the problem.

As to whether you appropriate money for some representative of the Tennessee State Medical Association to go to Chicago to attend that meeting, I think the American Medical Association saw the handwriting on the wall and started this Council on Industrial Hygiene and Industrial Medicine with the idea of keeping the industrial practice of medicine, the advice that you can give to employee and employer, in the hands of the private practitioners of medicine instead of getting it over into the state boards of health.

DR. MANIER: Mr. Speaker, I think maybe some of these gentlemen might not understand just exactly what is in that report because we just summarized those two things.

As far as I could get the report, there are three factors that have to be considered and approved. First, if the committee is authorized by this body, it will set out to establish a census of men who are interested either as full time, part time, consulting capacity or otherwise in industrial hygiene. I mean to set it up like it is set up in all other states, particularly New York. They have a very involved system. That is the first point. That is what they want the \$60.00 for, to carry on correspondence with the different members of this society, to let each man tabulate himself as to whether he is interested in that part of medicine.

The second factor was this: that when the parent Committee on Industrial Hygiene of the American Medical Association met in Chicago, in this report the statement is made that the home office in Chicago, at least, was very much disappointed that this body did not send a delegate to that meeting.

The third thing is what Doctor Schram has talked about, the matter of making this part of the postgraduate course. I think it would be an excellent idea to have that in your program if the thing works out where we can, but we will have to have one man, as we have had, conducting those courses. We might find that he will fulfill every other type of thing and might be a dead loss in this. Furthermore, the courses have to be uniform. I mean you have to give the same course in each one of the ten districts. If we start going into the industrial districts taking out something and putting in something different from other districts, we will have all types of confusion.

On the first two points I think this House should take action. On the last point, in relation to that, I would suggest that that be left to the vision and the practical judgment of the Committee on Postgraduate Instruction to see if they can work it in, but not to make it mandatory on them to do it, because it might make a right hard problem.

DR. EVERETT: I move that this House direct the Board of Trustees to appropriate the necessary

funds for transportation and expenses of a delegate to the congress, and also the money they request for the census, approximately \$60.00.

THE SPEAKER: Just to make a survey of those who are interested in this type of work?

DR. EVERETT: Yes, such as the committee requested yesterday.

DR. BURNS: I second that.

The motion was put to a vote and carried.

DR. MANIER: Report of the Committee on Fractures.

Your committee has examined this report and recommends its approval.

I move its adoption.

DR. LAWS: I second it.

The motion was put to a vote and carried.

DR. MANIER: Report of the Committee on Postgraduate Instruction in Pediatrics.

Your committee has examined this report and recommends its approval.

I move its adoption.

DR. LAWS: I second it.

The motion was put to a vote and carried.

DR. MANIER: Mr. Speaker, that concludes the work of this committee.

THE SPEAKER: I want to thank that committee for that very, very prompt report. They have done some good work.

RESOLUTIONS COMMITTEE

I appoint Dr. W. C. Chaney as chairman of the Committee on Resolutions in place of Dr. Jack Thompson.

Amendment to By-Laws

SECRETARY SHOULDERS: Mr. Speaker, I happen to have been a member of the committee appointed to consider the question of the membership of colored physicians of the state in the Tennessee State Medical Association.

Now, if such an action is taken, it will require an amendment to the by-laws. An amendment to the by-laws would have to lay over a day before it can be voted upon. I am, therefore, reading to you a proposed amendment, with a view to having it in time for adoption tomorrow, if you see fit to adopt it.

"Be It Resolved, That Chapter XII, Section 4, of the By-Laws be amended by adding at the end thereof the following:

"Provided further that the House of Delegates may issue a charter to one organization of negro physicians in Tennessee with a view to bringing into one component society all the negro physicians in Tennessee who are worthy of membership in the Tennessee State Medical Association and the American Medical Association."

Now, that one section of the by-laws is the one relating to the question of having two county societies within one county. This seeks to create a color line instead of a geographic line. The effect of the amendment would be this: the one colored

physician in Giles County, the one or two in Wilson, the two or three in Montgomery, and so on throughout the state could all become members of the one colored unit, which is the one they have now, and by reason of membership in that, existing purely as a component society of the state in the same fashion that any one county is a component society of the state, they would become members of the State Association and the American Medical Association.

Now, that is the effect of it. I will read the provision of the By-Laws in order that you may understand it.

Section 4 referred to is as follows:

"Only one component medical society shall be chartered in any county. When more than one county society exists, friendly overtures and concessions shall be made with the aid of the councilor for the district, if necessary, and all of the members throughout brought into one organization. In case of failure to unite, an appeal may be made to the council, which shall decide what action shall be taken."

This would follow that section to read as follows:

"Provided further that the House of Delegates may issue a charter to one organization of negro physicians in Tennessee with a view to bringing into the one component society all the negro physicians in Tennessee who are worthy of membership in the Tennessee State Medical Association and the American Medical Association."

THE SPEAKER: Referred to the Resolutions Committee.

DR. MANIER: I cannot help but wonder whether it would not be good psychology, if you see fit to adopt this resolution and to amend your by-laws, to add one additional phrase to it: "that this charter remain active, subject to the approval of the House of Delegates."

Personally, I would be in favor of going ahead and doing it, but I would like to put just as much psychology in it to prevent future unpleasantness.

DR. BURNS: You don't know what the other end of the thing is going to amount to.

DR. MANIER: No.

SECRETARY SHOULDERS: Here is the amendment; I think it probably is agreeable. At the conclusion of the amendment you proposed this wording:

"Such a charter, when and if issued, shall be in force from year to year, subject to the approval of the House of Delegates of the Tennessee State Medical Association."

At this point the subject of the amendment was discussed by Drs. H. A. Laws, H. H. Shoulders, S. R. Miller, J. B. Swafford, W. B. Burns, H. B. Everett, E. H. Baird, O. N. Bryan, G. D. Lequire, Webb Key, and M. S. Roberts.

THE SPEAKER: I am going to refer these resolutions with the amendment to the Committee on Resolutions. It will come up again tomorrow

morning and you can discuss it some more tomorrow.

We will now receive the report of the Committee on Reports of Officers.

REPORT OF THE COMMITTEE ON THE REPORTS OF OFFICERS

DR. O. N. BRYAN: The Treasurer's report. We have reviewed this and we recommend it to be accepted as read.

DR. STEELE: I move the adoption of the report.

DR. EVERETT: I second the motion.

The motion was put to a vote and carried.

DR. BRYAN: The next is the report of the Secretary-Editor for the calendar year of 1939. We recommend that that be approved as read.

DR. STEELE: I so move.

DR. EVERETT: I second it.

The motion was put to a vote and carried.

DR. BRYAN: The next is the report of the committee dealing with the charter. We recommend that that be accepted as read. While there are a lot of things in it not exactly as clear as they should be, we feel they did what they thought was best, and we recommend it be approved.

DR. WEBB KEY: I move the adoption.

DR. SWAFFORD: I second it.

The motion was put to a vote and carried.

BY-LAW AMENDMENT FOR MONDAY MEETING

DR. BRYAN: The next is the report of the Board of Trustees.

"At the suggestion of Dr. J. B. Stanford it was decided to consider a change in the by-laws which would enable the House of Delegates to meet on Monday afternoon. Such a change would give delegates an opportunity to attend the general sessions more regularly."

THE SPEAKER: This is open for discussion. What is your pleasure?

DR. WEBB KEY: Mr. Chairman, I make a motion that we amend the by-laws for the House of Delegates to meet on Monday afternoon.

THE SPEAKER: It has to be in writing. You make that as a motion?

DR. KEY: I open it up for discussion. I would like for it to be discussed to see what the different members think about it.

DR. STEELE: I second it.

THE SPEAKER: It has been moved that the House of Delegates meet on Monday instead of Tuesday.

DR. LAWS: Would that make it four days?

DR. KEY: The idea is to get through with the business so they can go to the general meeting.

DR. LAWS: Doctor Manier is not here, but last night we were discussing some way in order that this House of Delegates could attend to this business. Then that would put fifty men up yonder and they could hear some readings. Off and on,

for fifteen years, I have been in this House of Delegates. I don't think I have been able to hear over twenty papers up yonder. If this could be done the day before, as the doctor said, that will let the House of Delegates get through and let them enjoy some papers and be at the meeting. As it is, we are right down here in a cockpit all the time, and we don't get to hear any papers.

DR. W. E. GARROTT (Cleveland): As a member of the Eye, Ear, Nose, and Throat Section, we have had the matter come up year after year as to whether we would meet on Monday or meet on Tuesday during the first day of the general session. By mail ballot last year, we voted to try this year meeting on Tuesday, having met on Monday for several years. Several of the men in the Eye, Ear, Nose, and Throat Section have been perennially members of the House of Delegates.

I suppose that some of those societies, mine included, will some day change their custom, but for several years I have been in the House of Delegates; that is, for a young man, several years. I have been in favor of our meeting on Monday so that we could get through with our eye, ear, nose, and throat papers and then attend the House of Delegates. Yesterday afternoon I had to choose between a paper in my section and attending the House of Delegates session yesterday. I chose to attend my own session, and have been able to learn nothing about what transpired yesterday afternoon. So last night we voted to compromise again for another year's trial.

We are to have a two-day meeting, with the principal part of our program on Monday, and get through with it, with the idea of getting through before the House of Delegates start meeting so that the members of our section who are in the House of Delegates will be able to attend.

Now we come along and want the House of Delegates to meet on Monday. That is just a point. I don't know whether anybody else will bring it up, whether any of the pediatricians are having the same problem. Evidently it seems the best solution is to have no man in a special line of work in the House of Delegates so they can attend their own sessions.

We did vote to meet on Monday, have our principal meeting on Monday so it wouldn't conflict with the meeting of the House of Delegates. I think it is a good point that they should meet, if they like, on Monday so they can get through. I have heard but one paper in the general session in five years. I did not get to hear the presidential address last night.

If there is any way to work it out so the delegates can transact their business and attend the general session, I think it is a good move.

DR. KEY: I would like to explain that the idea of the author of this amendment was to have the House of Delegates meet on Monday afternoon and get through with what business they have on Monday, except the election of officers which would be held a day forward, probably Tuesday, at a small

session, and even if you had to meet Monday night, go on and thrash out what details you have to do. That would release everybody Tuesday morning except for the election of officers. Then you could be free to attend the regular meeting.

Doctor Bryan brought up a question that I think is well founded. He said would we have a quorum. Well, my answer to that is there is a certain number of men here who are almost standard. They are here every year, and their interest is primarily in the House of Delegates. I think we would have a quorum. He does not think we would. That is just a difference of opinion on that thing.

DR. M. S. ROBERTS: Mr. Speaker, I rise to support Doctor Bryan in the majority report of this committee. To me, it means another day's attendance. It is hard for all of us to get away for so long a time. To my mind, this meeting a day before will not relieve us, unless it does away with the meeting on Thursday. I don't believe the majority of this House of Delegates will be here for a Monday meeting. I doubt the wisdom of this change.

THE SPEAKER: I would like to read this from the by-laws:

"The Councilors shall be elected on the second day of the meeting after their report is made to the House of Delegates."

That would be Tuesday if we meet on Monday.

"The report of the Nominating Committee and the election of officers, except the councilors, shall be the first order of business of the House of Delegates after the reading of the minutes on the morning of the third day of the General Session."

That would be Wednesday. On Thursday everybody would be done. You know how they do after the election of officers. You cannot keep them. So you are going to add one at one end and cut off one at the other, it seems to me. I think we should consider that. On Thursday the House of Delegates would not have anything to do, and the vast majority of them would go home. That should be presented in writing.

SECRETARY SHOULDERS: Gentlemen, Doctor Stanford, who is a member of the Eye, Ear, Nose, and Throat Section, was author of the amendments that have not yet been introduced.

DR. KEY: He told me you had a copy of them. I think he lost his and he thought you had them.

DR. GARROTT: I would just like to say this: Jim Stanford had drawn up that report prior to our vote at last night's meeting. He was not here last night to express his views when that vote was taken. That is the reason of the apparent conflict of opinion between the eye, ear, nose, and throat men and his report.

SECRETARY SHOULDERS: It was his idea that it be presented by the Board of Trustees.

THE SPEAKER: I will say this in order to bring it before the House. You have a copy of it and I have a copy of it in my room. It simply is

to elect a President-elect. That is the whole idea. He thought the President-elect could be studying the mechanisms of the society for a year.

DR. BRYAN: I have that as the next item.

DR. EVERETT: Do I understand that this committee brings in two reports, a majority report and a minority report?

DR. BRYAN: Yes.

DR. EVERETT: And you recommend that the majority report be adopted?

DR. BRYAN: That it stand as it is.

DR. EVERETT: I move that the majority report of the committee be adopted.

DR. E. D. MITCHELL (Memphis): I second it.

THE SPEAKER: Do you understand what this is? Let us have Doctor Bryan read it so it will be clear.

DR. BRYAN: "At the suggestion of Dr. J. B. Stanford it was decided to consider a change in the by-laws which would enable the House of Delegates to meet on Monday afternoon. Such a change would give delegates an opportunity to attend the general sessions more regularly."

The majority report of this committee is that they would not attend. We do not believe it would work to the advantage of the society to make that change.

Doctor Everett moved that the majority report be adopted. Doctor Mitchell of Memphis seconded the motion.

THE SPEAKER: Any discussion? Those in favor say "aye"; opposed "no." It is so ordered, and the by-laws are not amended to that effect.

CONSTITUTIONAL AMENDMENTS

DR. BRYAN: The next thing that Doctor Stanford suggested was this:

"It was also agreed that an amendment to the constitution creating the office of President-elect in order that the incoming President may have a year to prepare himself for the duties of President was worthy of consideration."

We, the committee, unanimously feel that that is worthy of consideration and would recommend that that change be put into the minutes or adopted for that purpose, nominating a President-elect in order to give him the opportunity of getting acquainted with the affairs and the workings of the state society a year before.

DR. STEELE: Doctor Bryan, that is a change in the by-laws.

DR. BRYAN: No, it is an amendment to the constitution.

DR. STEELE: I move the adoption of the committee report.

DR. KEY: I second it.

The motion was put to a vote and carried.

THE SPEAKER: This lays over until the next meeting when we vote on whether we elect a President-elect.

You understand, gentlemen, we have not adopted that resolution. We just adopted the report of the

committee to accept it. It will be referred to this committee and then voted on next year.

ELECTION OF COUNCILORS

THE SPEAKER: We now elect councilors for the odd-numbered districts—i. e., First, Third, Fifth, Seventh, and Ninth. The following men were nominated and duly elected:

First District—Dr. L. E. Dyer, Greeneville.

Third District—Dr. H. A. Laws, Chattanooga.

Fifth District—Dr. V. S. Campbell, Murfreesboro.

Seventh District—Dr. C. D. Walton, Mt. Pleasant.

Ninth District—Dr. E. H. Baird, Dyersburg.

THE SPEAKER: Is there any new business to come before the House?

ELECTION OF VETERAN MEMBERS

DR. CLARK (Sparta): I have three members of the county medical society who have been members for twenty-five years or more. They have all arrived at the age where they prefer to be veteran members.

Dr. A. F. Richards was elected to membership in the White County Medical Society on June 14, 1894, and has been a consistent member to the present time—forty-six years. Due to age and ill-health, he is asking for a transfer to the veteran roll of membership.

W. J. Breeding, Sparta, was elected to membership in White County Medical Society on April 12, 1894, and has been a regular and consistent member to the present time—forty-six years. Due to age and ill-health, he is asking to be enrolled as a veteran member.

Dr. A. A. Bradley, Cookeville, Route 5, was elected a member of the White County Medical Society on February 8, 1912, and has been a consistent member for at least twenty-eight years, and due to infirm health is asking to be enrolled as a veteran member.

Upon motion, duly seconded, each of the above was elected to veteran membership.

SECRETARY SHOULDERS: You passed over the report of the chairman of the Advisory Committee to the Woman's Auxiliary. This will complete the standing committee reports. Doctor Anderson handed me the report a few minutes ago and asked that I read it. He wanted to go to the scientific session. I am merely accommodating him.

REPORT OF THE ADVISORY COMMITTEE TO THE WOMAN'S AUXILIARY

Secretary Shoulders read the report of the Advisory Committee to the Woman's Auxiliary.

To the Speaker of the House of Delegates:

The work of the Woman's Auxiliary has been without incident. I have seen no reason for any call meetings. There are 386 members in the state, which represents a steady growth in members over last year. Mrs. Murfree, the president, and other officers have been interested in their work and seem to have an intelligent idea of the functions of the Auxiliary. The local chapter in Nashville con-

sists of eighty-one members. I have been present at some of their meetings which were very interesting and a good spirit prevails.

W. B. ANDERSON,
Chairman, Advisory Council.

DR. M. S. ROBERTS: I move the adoption of this report.

DR. LAWS: I second the motion.

The motion was put to a vote and carried.

THE SPEAKER: Any other new business? If not, we stand adjourned until tomorrow morning at 8:00 o'clock.

The meeting adjourned at 10:05 o'clock.

THURSDAY MORNING, APRIL 11, 1940

The third session convened at 8:50 o'clock, Speaker Zemp presiding.

THE SPEAKER: The House will come to order.

We will now hear the report of the Nominating Committee, Dr. Ralph Monger of Knoxville, chairman.

ELECTION OF OFFICERS

DR. RALPH MONGER: The Nominating Committee wishes to submit the following nominees for officers of the Tennessee State Medical Association for next year.

For President—Dr. L. W. Edwards, Nashville; Dr. A. W. Deane, Pulaski; Dr. W. W. Porter, Springfield.

THE SPEAKER: Prepare your ballots for President. I will appoint Doctor Swafford and Doctor Oliver as tellers.

The delegates proceeded to cast their ballots, following which the tellers counted the votes and the Secretary reported the results.

THE SPEAKER: I declare Doctor Edwards elected.

The following were duly nominated and elected:

Vice-President, West Tennessee—Dr. J. Paul Baird.

Vice-President, Middle Tennessee—Dr. Joe Wright, Lynnville.

Vice-President, East Tennessee—Dr. A. J. Quinn, Ducktown.

Secretary-Editor—Dr. H. H. Shoulders, Nashville.

Trustee for Middle Tennessee—Dr. C. M. Hamilton, Nashville.

Speaker—Dr. E. R. Zemp, Knoxville.

DR. MONGER: The nominees for appointment by the Governor to the State Board of Health. Inasmuch as the terms of many on the present board are expiring, we have to present six names from West Tennessee, six names from Middle Tennessee, and three names from East Tennessee.

From West Tennessee we present the following names—Dr. Webb Key, Memphis; Dr. Jack Thompson, Jr., Jackson; Dr. W. O. Baird, Henderson; Dr. Joe Francis, Memphis; Dr. W. G. Rhea, Paris; Dr. J. G. Price, Dyersburg.

From Middle Tennessee—Dr. John M. Lee, Nashville; Dr. R. W. Billington, Nashville; Dr. W. G. Kennon, Nashville; Dr. J. O. Walker, Franklin;

Dr. J. U. Speer, Pulaski; Dr. John Freeman, Springfield.

From East Tennessee—Dr. W. K. Vance, Jr., Bristol; Dr. W. E. Bryan, Chattanooga; Dr. J. S. Hall.

DR. LAWS: I move that these be accepted and that they be presented to the Governor.

The motion was duly seconded, put to a vote, and carried.

COMMITMENT CHARGE FOR THE INSANE

DR. T. H. WOODS (Bell Buckle): Mr. Chairman, there has been some question as to the wording of commitment applications for insane, and some trouble has arisen in my part of the state. This resolution is to change the wording of the commitment charge and have it read as follows:

"Whereas, Chapter 17 of the Acts of 1919 in Section 4458 provides for qualifications of medical witnesses in the commitment of persons alleged to be insane, and

"Whereas, one clause of said section reads, 'And each physician shall make in writing a certificate of the results of such examination in the form provided by the Commissioner,' and

"Whereas, at present this provided form reads, 'I have this day examined _____, alleged to be insane and pronounced _____ so';

"Be It Resolved by the House of Delegates of the Tennessee State Medical Association, That the Commissioner of Institutions be requested to change the last-quoted language to read as follows: 'I have this day examined _____, alleged to be insane and recommend that _____ to be placed in an institution for observation and treatment.'"

DR. W. B. BURNS: That goes to the Resolutions Committee, doesn't it?

THE SPEAKER: Yes, it has already been there.

DR. H. H. SHOULDERS: Mr. Speaker, may I say just a word? Doctor Ray discussed this matter with me yesterday. It seems that the wording of the commitment papers now used subjects the doctor to the liability of a lawsuit because he certified a patient to be insane when someone else may judge him not to be.

The purpose of the resolution is to so change the commitment papers that the examining doctors certify the patient for commitment to an institution for an observation. Then the doctors in charge of the institution will pass on the question of insanity after observation.

It is understood that the Commissioner of Institutions can change this wording without passing an amendment to the laws of the state.

I make this statement because Doctor Ray asked me to yesterday.

DR. DAVID W. HAILEY: The Committee on Resolutions present the resolution and recommend its adoption.

DR. GARROTT: I move that this resolution be adopted.

DR. SWAFFORD: I second it.

THE SPEAKER: Are you ready for the question?

The question was called for, put to a vote, and carried.

PRESIDENT BAIRD'S ADDRESS

THE SPEAKER: At this time we have our present President, Doctor Baird. He is still in his prime.

The audience arose and applauded.

PRESIDENT BAIRD: I should like to say just a few words to you this morning in regard to something that is very near to my heart, in which I have become very much interested during the past year.

As all of you perhaps know, I was one of a committee of three to investigate the state wards in regard to medical care. It is unnecessary to go into detail on that because I am quite sure you have heard it all. But the thing which I would like to impress upon you as individuals is the condition of our mental institutions today.

We have something like 6,000 mentally ill patients in the State of Tennessee. The conclusion of this board was the fact that these institutions did not have a sufficient amount of finances to operate properly, and they had an inadequate staff with which to operate. I mean by that an insufficient staff, not enough personnel.

We also felt that our recommendation for the correction of this would be the proper allocation of funds. This is a question that has been given considerable thought. There was a committee a year or two years previous to that who had gone into it extensively and who had rendered a splendid report. We were guided, to a great extent, by the summary as reported by that committee.

As you know, in Tennessee only 1.8 per cent of its revenue goes to the upkeep of mental institutions. In some states 13.2 per cent of their revenue goes to the upkeep of mental institutions. Even in the South, I think it is Virginia, 6.8 per cent of their income goes to the upkeep of mental institutions. The mental institutions of Tennessee are not getting a proper allocation of funds to operate on.

We felt that the personnel, particularly the medical personnel, of the institutions should be divorced from the political arena. It is quite a difficult thing to get competent men to come to the State of Tennessee or go into these institutions without any security of appointment whatsoever. They go in, perhaps, for two years or four years, depending upon the tenure of office of the appointing power. Gentlemen, you cannot get the best of men who will go into an institution just for two years or four years, and devote their lives to it, with the uncertainties of it.

We are making a plea that the personnel be divorced from the political arena.

Another thought that had been previously suggested and which we endorsed fully is the establishment of a psychiatric hospital at one or both of the medical centers of the state. In that way you would have the advantage of educating the young men who are coming out from medical colleges along the lines of psychiatry. You would also have the opportunity of training your attendants and nurses. By that means, in the course of a few years, we could properly man our institutions.

I don't think that any criticism should be pointed to the men who are in charge of these institutions, because they certainly are doing the best they can with what they have. They have an insufficient amount of means, and they have illy-trained staffs of attendants and orderlies which are changing constantly, and with which we have very little to do.

That has principally been my contribution to medicine this year, and I should like to pass it along to the incoming President, and let you men study it over and think it over. When the opportunity presents itself, I trust that you will avail yourselves of doing something for the mentally sick of the State of Tennessee.

I thank you very kindly for the cooperation that has been extended to me during my tenure. I am under many obligations to Doctor Shoulders and his office for the courtesies and advice and suggestions and help they have given me. In fact, every man I have approached has offered me everything he had to make my term a success.

I thank you again for the opportunity of working with you, and I trust soon to resume my seat in the House of Delegates. (Applause.)

THE SPEAKER: We will now hear from the incoming President, Doctor Edwards, of Nashville. (Applause.)

PRESIDENT-ELECT EDWARDS' ADDRESS

PRESIDENT-ELECT EDWARDS: Mr. Speaker and Members of the House: I really feel very much out of place in appearing before this body in any other capacity than trying to apologize for something the Legislative Committee has not done. But I want to express to you my deep appreciation for the honor you have conferred on me in placing me in this office.

I realize full well the responsibilities entailed in trying to carry on the fine work that has been done by my predecessors, but I have one consolation, that I will have your full cooperation and the cooperation of our most able Secretary and the members of the Board of Trustees.

I pledge you my effort to carry on this work to the very best of my ability. Thank you. (Applause.)

AMENDMENTS TO CONSTITUTION

THE SPEAKER: There is one other resolution to come before the House this morning. The only reason we want to bring this up this morning is it has to lay over for a year. It is just to have the

President-elect added to the list of officers elected by this House.

DR. BOGART: I have a copy that Doctor Stanford gave me.

This is as he had it written.

"Article VIII, Section 1 of the Constitution shall be amended to read:

"Section 1. The officers of the Association shall be a President, a President-elect, a Vice-President for each of the three grand divisions of the state, a Secretary-Editor, five Trustees, ten Councilors, and a Speaker of the House of Delegates. The Speaker of the House of Delegates shall be ex officio a member of the Board of Trustees while in office. The retiring President of the Association shall be a member of the Board of Trustees for one year. Three members of the Board of Trustees shall be elected by the House of Delegates, one from each grand division of the state. The elected trustees shall serve for a period of three years. The Board of Trustees will organize by the election of a chairman. The chairman of the Board of Trustees shall be ex officio treasurer of the Association. There shall be one councilor for each councilor district. The councilors shall organize annually by the election of a chairman of the council."

The only change in that is to add a President-elect.

"Article VIII, Section 2 of the Constitution shall be amended to read:

"Section 2. The President-elect, three Vice-Presidents, Speaker of the House of Delegates, and the Secretary-Editor shall be elected annually for one year. The President-elect shall assume office as President at the expiration of the term of the President. Five councilors shall be elected annually for two years."

The only change in that is adding the words "President-elect."

"Article VIII, Section 6 of the Constitution shall be amended to read:

"Section 6. No member who has not been a member in good standing for five years next preceding the election, or who is not in attendance at the meeting shall be eligible for election as President-elect or Vice-President."

That, again, is just adding the term "President-elect."

"Article VIII, Section 5 of the Constitution shall be amended to read:

"Section 5. All officers of the Association shall be elected on the second day (that is to read 'the last day') of the annual meeting and shall assume office immediately following the annual meeting."

DR. S. R. MILLER: That should say "except the councilors."

DR. BOGART: There is no change in any of those places in the Constitution except adding the word "President-elect."

THE SPEAKER: Any new business?

NEXT MEETING PLACE

Nominating Committee, where is the place of meeting?

DR. C. M. HAMILTON: I will assume the responsibility for inviting this organization to meet in Nashville next year.

SECRETARY SHOULDERS: I second that nomination.

THE SPEAKER: Any other nominations? If not, the nominations are closed.

The motion was put to a vote and carried.

VOTE OF THANKS TO CHATTANOOGA

DR. EVERETT: I see you are about to finish your business. I think it would be a matter which would be seriously overlooked if we did not thank the Chattanooga and Hamilton County Medical Society for their most gracious hospitality during our visit at this time. I wish to move that the resolution be adopted.

DR. W. B. BURNS: I second it.

SECRETARY SHOULDERS: May I speak just a moment before adoption of that resolution? I want to say that the men over here began work early. They have worked faithfully and diligently, and I think they have made the meeting a tremendous success in spite of some difficulties.

I want to second the motion made by Doctor Everett that this House go on record as expressing grateful appreciation to our host society for a most excellent meeting.

THE SPEAKER: All in favor of Doctor Everett's motion, extending our grateful thanks to the Hamilton County Medical Society, say "aye"; opposed "no." It is so ordered.

REPORT OF RESOLUTIONS COMMITTEE REGARDING COLORED PHYSICIANS

DR. C. M. HAMILTON: We have not had a report from the Committee on Resolutions in regard to the colored physicians.

DR. W. C. CHANEY: Mr. Chairman and Members of the House of Delegates: The Committee on Resolutions studied over this resolution about changing Chapter XII, Section 4 of the By-Laws, and we wish to submit, if it is possible, a majority and a minority report. I am going to ask the other members of the committee, Doctor Hailey and Doctor Hamilton, if they wish, to fill in some of the things that I omit.

The committee wishes to go on record, after due deliberation, that it is entirely in sympathy with the negro physicians of Tennessee in wanting membership in the American Medical Association and it feels that they should have this membership.

That was agreed to by the three of us. We talked about the procedure quite some time, but we felt that this resolution that was presented here was only an enabling act; that is, it empowers the House of Delegates to do this, and that is all there is to this resolution. It enables the House of Delegates to do it, but does not give them this privilege. To extend them this privilege, it has to be voted on by the House of Delegates.

In favor of adopting this amendment were the majority, Doctor Hailey and Doctor Hamilton. I was in the minority on that. I felt that as long as there was a division of opinion here, there might be some other method whereby we could solve this problem other than through the provision in changing the by-laws. I also felt, without knowing very much about it, that if we put this in our by-laws, later on when some legal procedure came up, as is going on now in two of the cities, the lawyers might pick on this to show the feeling of the physicians of the State of Tennessee toward the negro doctors.

In favor of the adoption of this amendment we have two men, and one against the adoption.

THE SPEAKER: That is your minority report?

DR. CHANEY: Yes.

THE SPEAKER: Let us hear from the majority, Doctor Hamilton.

DR. J. L. HAMILTON: Doctor Hailey and I were in favor of this motion. We felt that we were in sympathy with the colored physicians. They certainly have a just cause. People in Nashville have studied this and probably have more colored physicians in Davidson County than any other county in the state. The majority of them that we have talked to are in favor of it. If it can be worked out legally, we felt they had a just cause and we are in favor of it.

THE SPEAKER: Just what does this resolution suggest, that the House of Delegates may do this thing? It does not tell them to do it.

DR. HAILEY: Yes.

DR. J. L. HAMILTON: We pass it back to the House of Delegates.

THE SPEAKER: Doctor Hailey.

DR. HAILEY: I felt that this was too big a question for the committee to decide what the attitude was toward it.

As the resolution was made, I felt we were to pass on the enabling act so as to make it possible for the House of Delegates to settle this question as they saw fit. Personally, I felt that the negro physician was fair in his claims. I think the men who approached the directors showed that all they wanted were the privileges that would accrue to them by being a component of the American Medical Association. They cannot belong to any special societies. There frequently are remunerative positions, and the first question they ask is: "Are you a member of the American Medical Association?" They were not asking at all to come into this body.

The enabling act that we passed on plainly states that, even if it should be seen fit to give them membership, it would be acted upon year after year. To my mind, that is a step we should take, so we will be able to do the other at the next session.

THE SPEAKER: As I understand it, the resolution suggests a definite way by which you should do it, forming that society from the state at large.

SECRETARY SHOULDERS: Doctor Hamilton served as the chairman of the committee which was authorized by the House last year. I suggest you hear him.

DR. CHANEY: Let us hear the resolution.

AMENDMENT TO BY-LAWS

SECRETARY SHOULDERS: The resolution is to this effect:

"Be It Resolved, That Chapter XII, Section 4 of the By-Laws be amended by adding at the end thereof the following:

"Provided further that the House of Delegates may issue a charter to one organization of negro physicians in Tennessee with a view to bringing into the one component society all the negro physicians in Tennessee who are worthy of membership in the Tennessee State Medical Association and the American Medical Association."

This wording was added here yesterday: "Such a charter, when and if issued, shall only be in force from year to year, subject to the approval of the House of Delegates of the Tennessee State Medical Association."

THE SPEAKER: In other words, the approval of the issuance of a charter would be acted upon from year to year.

Discussion by Dr. J. B. Swafford, the Speaker, Drs. E. G. Wood, S. R. Miller, H. A. Laws, who move that the amendment be tabled.

Motion seconded by Doctor Monger.

THE SPEAKER: There is a motion before the House. It is not debatable. Are you ready for the question to table the motion? All in favor say "aye"; opposed "no." We will have to have a rising vote on that. All in favor to stand up. (Thirteen.) All opposed stand. (Sixteen.) That motion is lost.

Now, then, any further discussion on the original motion?

Further discussion by Drs. Lequire, Laws, H. H. Shoulders, M. S. Roberts, C. M. Hamilton, Kyle Copenhaver, and Speaker Zemp.

DR. HAILEY: I rise again to say that the question before the House is this resolution which is merely an enabling act. I move the question, sir.

THE SPEAKER: Are you ready for the question?

DR. S. R. MILLER: What is the question?

THE SPEAKER: The motion before the House is the adoption of the majority report of the Committee on Resolutions concerning this resolution. Are you ready for the question? All in favor say "aye"; opposed "no." The "ayes" have it. It is carried.

The next thing is, who is going to do all this work? Our committee is through. We made our report.

DR. W. B. BURNS: The resolution lays over until next year, doesn't it?

THE SPEAKER: No, that is not a change of constitution.

DR. C. M. HAMILTON: There is nothing to be done until they do make application for a charter.

SECRETARY SHOULDERS: If they make application next year, it will come before the House for consideration on its merits. That is all.

THE SPEAKER: Any other business to come before the House?

DR. W. B. BURNS: I move we adjourn.

The motion was regularly seconded and carried. The meeting adjourned at 10:05 o'clock.

Index to Proceedings of the House of Delegates

PAGE

Call to Order.....	459
Roll Call	459
Appointment of Committees.....	460
Adoption of Minutes of Previous Meetings as Printed	460
Selection of Nominating Committee.....	460
Report of Treasurer, by Dr. C. M. Hamilton---	460
Report of Board of Trustees, by Dr. C. M. Hamilton	462
Report of Incorporators, by Dr. C. M. Ham- ilton	463
Report Regarding Colored Physicians, by Dr. C. M. Hamilton	464
Report of Credentials Committee, by Dr. Ralph Monger	465
Adopted	465
Report of Secretary-Editor, by Dr. H. H. Shoulders	465

Reports of Standing and Special Committees

Scientific Work, by Dr. H. H. Shoulders.....	466
State Tuberculosis Commission, by Dr. W. S. Rude	466
Hospital, by Dr. E. G. Wood.....	467
Public Policy and Legislation, by Dr. L. W. Edwards	467
Insurance, by Dr. A. F. Cooper.....	468
Education, by Dr. J. Marsh Frere.....	469
Liaison, by Dr. W. C. Dixon.....	470
Cancer, by Dr. Ralph Monger.....	470
Physical Therapy, by Dr. J. F. Hamilton.....	470
Industrial Hygiene, by Dr. C. E. Newell.....	470
Fractures, by Dr. Duncan Eve.....	471
Postgraduate Instruction in Pediatrics, by Dr. John M. Lee.....	471
Adoption of Printed Report of Delegates to A. M. A.....	472
Remarks by Dr. Van Etten.....	472

Reports of Councilors

PAGE

First District, by Dr. L. E. Dyer.....	473
Second District, by Dr. S. R. Miller.....	474
Third District, by Dr. H. A. Laws.....	474
Fourth District, by Dr. J. T. Moore.....	475
Sixth District, by Dr. H. S. Shoulders.....	475
Ninth District, by Dr. E. H. Baird.....	475
Tenth District, by Dr. W. B. Burns.....	475
Report of Committee on Memoirs, by Dr. Tigert	476
Report of Committee on Reports of Commit- tees, by Dr. J. O. Manier.....	477
Resolutions Committee	479
Discussion on Matter of Colored Physicians..	479
Amendment to By-Laws.....	479-486
Report of Committee on Reports of Officers, by Dr. O. N. Bryan.....	480
Election of Councilors.....	482
Election of Veteran Members.....	482
Advisory Committee to the Woman's Auxiliary	482
Report of Nominating Committee, by Dr. Ralph Monger	482
Election of President.....	482
Election of Other Officers.....	482
Resolution Pertaining to Change in Commit- ment Charge for Insane, by Dr. T. H. Woods	483
Discussion and Adoption.....	483
Remarks by President Baird.....	483
Remarks by President-elect Edwards.....	484
Amendments to Provide for Election of Presi- dent-elect	481-484
Invitation to Hold 1941 Meeting in Nashville	485
Expression of Thanks to Hamilton County Medical Society	485
Report of Resolutions Committee Regarding Colored Physicians, by Dr. W. C. Chaney---	485
Discussion	485
Majority Report Adopted.....	486
By-Laws Amended	486
Adjournment	486

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of
Tennessee

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H. H. SHOULDERS, M.D., Editor and Secretary

DECEMBER, 1940

THE ISSUE

SHALL PATIENTS AND DOCTORS RETAIN THEIR FREEDOM OF JUDGMENT IN THE MATTER OF MEDICAL CARE, OR SHALL THIS FREEDOM BE SURRENDERED TO SOME GOVERNMENTAL AGENCY?

EDITORIAL

PNEUMONIA CONTROL PROGRAM

By the cooperative effort of the Tennessee State Medical Association and the Tennessee State Department of Public Health, a pneumonia control program for the profession of Tennessee is being planned and soon will be launched.

Briefly, the plans include the following procedures:

A discussion of pneumonia, its diagnosis and treatment, before every local medical society in the state by one instructor-consultant named by the Association.

A small pamphlet on the subject of pneumonia is being prepared and will be available for distribution to every doctor who attends these meetings.

A method for the free distribution of drugs for the treatment of indigent pneumonia patients will be arranged by the State Department of Health through doctors and local health departments.

In a short time the officers of local so-

cieties will have had a communication on the subject even before this editorial is read.

It is not necessary to state that the entire chapter on the treatment of pneumonia has been rewritten within the last few years and no doctor can render the highest service to his patients without first becoming familiar with all these new developments.

The instructor-consultants for East Tennessee are Drs. E. R. Zemp and R. B. Wood, Knoxville; Tim J. Manson, Chattanooga; and E. T. Brading, Johnson City.

Middle Tennessee—Drs. J. O. Manier, E. L. Turner, O. N. Bryan, and W. R. Cate, Nashville.

West Tennessee—Drs. C. H. Sanford, Tom Mitchell, L. C. Sanders, and Alfred Goltman, Memphis.

It is suggested that members of local societies make these advantages available to non-members in order that they too may render the best service possible to their patients.

DOCTORS' CONVENTIONS ARE DIFFERENT

A very beautiful editorial appeared in the *Courier-Journal* under the above heading soon after the Southern Medical Association adjourned the meeting held in Louisville, Kentucky, November 12-15, 1941.

The editorial is as follows:

"The Southern doctor is a gentleman and a scholar.

"This fact was impressed on Louisvillians by the conventions of the Southern Medical Association which ended yesterday.

"With few exceptions conventions are pretty much standardized these days. The program consists of pleas for cooperation, speeches citing the need for legislation favoring the convening group, a resolution which says, in effect, tax the other fellow. There is a banquet, a reunion, a dance, much drinking. The group's secretary and one or two other dependable members do most of the work.

"The doctors were different. Their convention was more like a condensed post-graduate course in medicine. There was a sharing of professional knowledge from which not only doctors, but laymen will benefit."

This editorial pleased all who read it. It certainly will please all who read it here.

As editor, I shall assume to represent the sentiment of our entire membership in expressing to the editor of the *Courier-Journal* our grateful appreciation of him and the editorial.

READ THE JOURNAL

This issue of the JOURNAL contains a great deal of material of interest to every member of the Association. If you do not keep a file of all the issues, please file this one away with care.

Among other things, it contains a list of our members for the year 1940. You will have occasion to refer to this list many times in the year just ahead.

It contains the minutes of the meeting of the House of Delegates held in Chattanooga this year. Read these minutes and become acquainted with the many activities carried on by the Association. Become familiar, too, with the issues that confront the profession.

We cannot be united unless we are informed, and we cannot be effective unless we are united on all vital issues.

CONGRATULATIONS TO DR. ALFRED BLALOCK

The editor will assume to represent the entire membership of the Association in expressing hearty congratulations to one of our members, Dr. Alfred Blalock, upon being awarded the research medal of the Southern Medical Association "in recognition of his distinguished contributions to knowledge of the circulation, especially in relation to shock."

Only seven such awards have been made, including the one received by Doctor Blalock. The first was awarded to Dr. Chas. C. Bass, New Orleans, in 1912; the second to Dr. J. Shelton Horsley, Richmond, Virginia, in 1916; third to Dr. Kenneth M. Lynch, Charleston, South Carolina, in 1921; fourth to Dr. Evarts Graham, St. Louis, Missouri, in 1932; fifth to Dr. William MacNider, Chapel Hill, North Carolina, 1933; sixth to Dr. E. W. Goodpasture, Nashville, 1937.

It should be a source of satisfaction and pride that two members of the Tennessee

State Medical Association have merited and received this coveted award.

CHRISTMAS GREETING

Best wishes for a merry Christmas and a happy New Year from the headquarters staff.

H. H. SHOULDERS, M.D.
W. M. HARDY, M.D.
MISS WILLARD BATEY
MRS. H. A. HARRISON

DEATHS

DR. J. A. CRISLER

Dr. J. A. Crisler, Memphis; Memphis Hospital Medical College, 1890; aged seventy-three; died November 18 following a long illness.

DR. WILL FOSTER FYKE

Dr. Will Foster Fyke, Springfield; Vanderbilt University, School of Medicine, 1918; aged fifty; died November 27.

NEWS NOTES AND COMMENTS

At the recent meeting of the American Academy of Ophthalmology and Otolaryngology, Dr. Ralph O. Rychener of Memphis was elected one of the vice-presidents.

WOMAN'S AUXILIARY

MRS. HARVEY CARTER GIVES REVIEW FOR AUXILIARY

Mrs. Harvey Carter, appearing in a review of the new book, "The Doctor and His Patient," by Dr. A. E. Hertzler, was presented at the meeting of the Woman's Auxiliary to the Rutherford County and Stones River Academy of Medicine, Friday afternoon, with Mrs. A. J. Jamison and Mrs. V. S. Campbell hostesses at the home of the former.

Particularly apropos of the present were Mrs. Carter's quotations from Doctor Hertzler concerning war which he described

as "mothers swapping their sons' lives for gold pins" and "child murder," which must be approached "in the same spirit with which a doctor attacks the control of a disease, except the doctor is without hate; he deals with facts and asks no selfish reward." Mrs. Carter stayed close by the content of the work, which is said to be an answer to requests by readers of "The Horse and Buggy Doctor" that Doctor Hertzler bring more detail and personal reaction into a literary sequel. There is no plot, Mrs. Carter said, and the book emphasizes the place of a child in the home. It is dedicated to one of the author's daughters.

"A boy needs his father more than he needs a juvenile court," she quoted the author, and from her own reaction to the book the speaker declared she believed it an "attempt on the part of the author to distinguish between religion and Christianity."

The Advisory Council was elected as follows:

Mrs. J. A. Scott, president, announced selection of Dr. B. W. Rawlins, Dr. J. C. Kelton, and Dr. J. F. Adams as advisory board for the new year.

Mrs. Matt Murfree reviewed high lights of the Southern Medical Association, which she recently attended in Louisville.

Mrs. H. H. Hudson of Cleveland, a former president of the auxiliary, was a guest.

A salad plate was served at the conclusion of the program.

The Lincoln County Medical Auxiliary held its November meeting with Mrs. W. S. Joplin in Petersburg. Mrs. Joplin's home was decorated with lovely autumn flowers.

Nine members responded to roll call by naming a charitable institution or with some fact about radium. Mrs. J. T. Gordon gave an interesting paper entitled, "The Red Cross and Its Mission." Mrs. C. L. Goodrich reviewed "The Life of Madame Curie."

The hostess served delightful afternoon refreshments, and the meeting adjourned until the first Wednesday in December, when it will be held at the home of Mrs. C. L. Goodrich.

As the Christmas season draws near, we turn our thoughts to the coming of the Prince of Peace and bow our heads in humble thanks that we are living in a free country and a land of plenty. Our prayers go out to the war-torn countries of Europe, and would that their eyes could be opened and their souls quickened to know that which is true, right, and good. May peace and good will come to all nations, uniting all people everywhere in the holy bonds of love. May you all have a very joyous Christmas and a happy and prosperous New Year.

MEDICAL SOCIETIES

Anderson County:

The Anderson County Medical Society met in regular monthly session at the office of the County Health Unit, December 2, 1940, at 7:30 P.M., with the following members present: Doctors Cox, Dings, Jennings, Ballou, Hicks, Hall, and A. K. Morris.

The minutes of the previous meeting were read and approved. The treasurer's report showed a balance on hand of \$46.93.

This being the annual business meeting, the entire time was devoted to business and a general discussion of the future of the society with particular reference to proposed union with an adjoining county medical society, this step having been approved and suggested by the State Medical Association. On motion of Doctor Hicks, Doctors Ballou and Jennings were appointed to represent our society in the meeting with the Campbell County Society and present the idea of forming a joint medical society. If such a plan is approved by the two societies, the question of inviting another county society to join in may be considered.

Awaiting the outcome of negotiations with the Campbell County Medical Society, the dues were placed at \$6.00 for 1941. The necessary adjustment of dues will be made pending the outcome of the proposed plan of forming a joint society with Campbell County.

Dr. A. K. Morris of Fork Mountain was unanimously elected to membership.

The following officers were elected for 1941:

President—Dr. A. W. Bishop, Morris, Tennessee.

Vice-President—Dr. George D. Schuessler, Oliver Springs, Tennessee.

Secretary and Treasurer—Dr. J. S. Hall, Clinton, Tennessee.

Delegates to State Convention—Dr. P. M. Dings, Briceville, Tennessee.

Alternate to State Convention—Dr. A. W. Bishop, Norris, Tennessee.

Suggested program for January, 1941:

Paper—Dr. A. W. Bishop, Norris, Tennessee.

Report on JOURNAL Article—Dr. O. E. Ballou, Clinton, Tennessee.

(Signed) J. S. HALL, M.D., *Secretary*.

Dyer, Lake, and Crockett Counties:

Members of the Dyer, Lake, and Crockett Counties Society and many visiting physicians were guests of the Baird Brewer General Hospital at dinner in the Hotel Cordell Hull, Dyersburg, December 4. The affair was a delightful occasion.

Immediately after dinner the Dyer, Lake, and Crockett Counties Medical Society met in regular monthly session. Papers read were: "Preventive Surgery in Malignancies," by Dr. J. P. Baird, Dyersburg. Discussion opened by Dr. W. L. Williamson, Memphis.

"Diagnosis and Treatment of Anemias," by Dr. E. J. Teeter, Indianapolis. Discussion opened by Dr. Conley Sanford, Memphis.

"Tennessee State Medical Association Pneumonia Control Program," by Dr. L. C. Sanders, Memphis.

The following officers were elected to serve for 1941:

Dr. E. B. Smythe, Tiptonville, President.

Dr. C. L. Denton, Dyersburg, Secretary-Treasurer.

Dr. J. W. Wynne, Newbern, Vice-President, Dyer County.

Dr. W. S. Alexander, Ridgely, Vice-President, Lake County.

Dr. W. H. Stallings, Friendship, Vice-President, Crockett County.

Dr. N. S. Walker, Dyersburg; Dr. R. W. Griffin, Tiptonville; and Dr. W. H. Stallings, Friendship, Board of Censors.

Dr. J. D. Brewer, Dyersburg, Delegate, Dyer County.

Dr. J. P. Baird, Dyersburg, Alternate, Dyer County.

Dr. W. L. Sumners, Ridgely, Delegate, Lake County.

Dr. W. S. Alexander, Ridgely, Alternate, Lake County.

Dr. W. H. Stallings, Friendship, Delegate, Crockett County.

Dr. E. O. Prather, Alamo, Alternate, Crockett County.

(Signed) C. L. DENTON, M.D.,
Secretary.

Five-County Society:

The Hardin, Lawrence, Lewis, Perry, and Wayne Counties Medical Society met in Waynesboro on November 26.

The following papers were read:

"Ectopic Pregnancy," by Dr. W. C. Kennedy, Florence, Alabama. Discussion by Drs. T. J. Stockard and V. H. Crowder, Lawrenceburg.

"Anaesthesia in Obstetrics," by Dr. Leo Harris, Lawrenceburg. Discussion by Drs. Owen Williams, Savannah, and F. H. Norman, Waynesboro.

New officers elected for 1941 were: Dr. C. C. Stockard, Lawrenceburg, President; Dr. O. C. Doty, Savannah, Vice-President for Hardin County; Dr. Leo Harris, Lawrenceburg, Vice-President for Lawrence County; Dr. W. E. Boyce, Flatwoods, Vice-President for Lewis County; Dr. O. A. Kirk, Linden, Vice-President for Perry County; Dr. Frank Norman, Waynesboro, Vice-President for Wayne County; Dr. O. H. Williams, Savannah, Secretary and Treasurer; Dr. J. V. Hughes, Savannah, Delegate to the Tennessee Medical Association meeting in April; Dr. Dexter L. Woods, Waynesboro, Alternate Delegate.

Greene County:

The Greene County Medical Society met December 3 at the Brumley Hotel and elected the following officers for the year 1941:

Dr. John Kite, Bulls Gap, President.

Dr. M. A. Blanton, Mosheim, Vice-President.

Dr. Rae B. Gibson, Greeneville, Secretary.

Dr. W. T. Mathes presented a paper entitled, "The Nervous Child."

(Signed) RAE B. GIBSON, M.D.,
Secretary.

Outside Our Profession?" Dr. H. W. Bachman of Bristol won the prize.

There were sixteen members and two visitors present.

(Signed) C. F. N. SCHRAM, M.D.,
Secretary-Treasurer.

Hamilton County:

December 5—Election of Officers.

December 12—A memorial meeting was held. Two papers were read. One by Dr. W. C. Sanford on "Syphilis Control" and the other, "The Relationship of Ophthalmology in General Medicine," by Dr. Frank B. Easley.

Robertson County:

The regular meeting of the Robertson County Medical Society was held at the Robertson County Hospital, Tuesday, November 21.

Dr. J. E. Wilkerson was the regular essayist and the subject of his paper was "Cardiac Emergencies."

Officers were elected for the year 1941 as follows: Dr. C. M. Banks, Springfield, President; Dr. Robert H. Elder, Cedar Hill, Vice-President; and Dr. John S. Freeman, Springfield, Secretary-Treasurer.

(Signed) JOHN S. FREEMAN, M.D.,
Secretary.

Knox County:

December 3—"Horseshoe Kidney with Case Report," by Dr. Tom R. Barry. Dr. Eugene Nicely led the discussion.

Polk County:

The following officers have been elected for the coming year: Dr. W. Y. Gilliam, Copperhill, President; Dr. H. P. Hyde, Copperhill, Vice-President; Dr. F. O. Geisler, Isabella, Secretary-Treasurer; Dr. F. O. Geisler, Delegate; Dr. T. J. Hicks, Copperhill, Alternate.

Washington County:

At the meeting held December 5, Dr. J. R. Bowman read a paper on "Meningococcus Meningitis." Discussion by Doctors Friberg, Wallace, and Poole.

Officers for the new year were elected as follows:

Dr. W. D. Hankins, Johnson City, President.

Dr. J. R. Bowman, Johnson City, Vice-President.

Dr. H. B. Cupp, Mountain Home, Secretary-Treasurer.

Dr. C. H. Kyker, Johnson City, Board of Censors.

The program scheduled for January 2 is as follows:

"Lobar Pneumonia," by Dr. C. W. Babson. Discussion by Doctors Brading and McFadden.

"Transurethral Management of Certain Bladder Conditions," by Dr. G. J. Budd. Discussion by Doctors Gresham and Slade.

There were twenty-three members and guests present.

(Signed) WALTER D. HANKINS, M.D.,
Secretary.

Sullivan-Johnson Counties:

The Sullivan-Johnson Counties Medical Society held its regular meeting on Wednesday evening, December 4, at the Kingsport Inn, Kingsport. The following officers were elected for 1941:

Dr. William Gammon, Bristol, President.

Dr. W. A. Wiley, Kingsport, Vice-President, Sullivan County.

Dr. Robert O. Glenn, Mountain City, Vice-President, Johnson County.

Dr. D. D. Vance, Bristol, Secretary-Treasurer.

Dr. T. R. Bowers, Bristol, Censor.

Dr. L. C. Cox, Kingsport, Executive Committee.

Dr. W. A. Wiley, in charge of the program, conducted a question-and-answer contest on the topic: "What Do We Know

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By HUGH BARR, M.D.
Medical Arts Building, Nashville

Anoxia: The Anesthetist's Point of View. Ralph M. Waters, M.D. The Journal of the American Medical Association, November 16, 1940.

The delivery of oxygen from the respired atmosphere to the cells of the nervous system may be thought of as a transport mechanism. An interference with this mechanism may be brought about by many causes, such as illness, injury, surgery, drugs, anesthetic agents, obstruction to airway, spasm of the glottis, narcotics, position on operating table, tight dressings, and secretions from the bronchi.

While oxygen administration is lifesaving and advisable, the cause of the cyanosis and oxygen want should be discovered and remedied. The signs of oxygen want occurring on the operating table is characterized by cyanosis, vomiting, dilated pupils, twitching of the muscles, and circulatory and respiratory abnormalities. In the ward oxygen want is characterized by psychic changes, headache, nausea, air hunger, rising temperature, and circulatory and respiratory abnormalities.

It is important to realize that oxygen want to the central nervous system is one of the most common deleterious effects of anesthesia. The integrity of the patient's oxygen transport mechanism should be investigated before pain-relieving drugs are administered. Oxygen therapy is only one way of treating oxygen want, but combined with accurate diagnosis of the cause and treatment thereof will eliminate the necessity of oxygen therapy.

FEVER THERAPY

By E. E. BROWN, M.D.
Doctors Building, Nashville

The Treatment of Acute Infectious Arthritis of Undetermined Origin with Artificial Fever. Robert M. Stecher, M.D., Senior Clinical Instructor in Medicine, Western Reserve University Medical School, and Walter M. Solomon, M.D., Research Fellow in Medicine of Western Reserve University Medical School, at City Hospital. American Journal of Medical Science, 194: 4, 485, October, 1937.

Acute nonspecific infectious arthritis is a relatively common syndrome which may be differentiated from acute rheumatic fever and acute gonorrheal arthritis by certain well-defined distinguishing characteristics. It has received scant attention in the literature and may be regarded as an acute form of atrophic, rheumatoid, or chronic

infectious arthritis. Of the twenty cases of acute nonspecific infectious arthritis treated with artificial fever therapy, twelve (sixty per cent) received prompt relief and apparent cure, while eight (forty per cent) were partially relieved. The course of the disease was favorably modified in every case. These results compare favorably with those observed in the treatment of acute gonorrheal arthritis by artificial fever.

Treatments consisted of induced fever (about 105 degrees Fahrenheit) maintained usually from four to five hours. The patients who recovered completely received from two to twenty-five hours of fever (average 7.33 hours). The patients with partial relief received five to thirty hours of fever (average seventeen hours).

INTERNAL MEDICINE

By R. B. WOOD, M.D.
By D. R. THOMAS, M.D.
Medical Arts Building, Knoxville

Roentgen Treatment of the Adrenal Glands in Angina Pectoris. W. Rabb, Burlington, Vermont. Annals of Internal Medicine, October, 1940.

The typical occasions on which anginal attacks occur, on physical exertion, following exposure to cold, and after emotional upsets, are accompanied by discharges of adrenalin into the blood stream. This leads to anoxemia of the heart muscle due to an increase of myocardial oxygen consumption without adequate dilatation of the sclerotic coronary arteries.

Reasons for the theory are:

1. Adrenalin often produces pain in persons with coronary disease.
2. Large doses of adrenalin may produce pain in normal persons.
3. Inhalation of low oxygen concentrations leads to discharge of adrenalin and to anginal pain in coronary disease.
4. Nicotine causes discharges of adrenalin and frequently produces pain in coronary disease.
5. Overdosage of insulin produces a reactive output of adrenalin and is sometimes followed by symptoms of angina.
6. Increased amount of adrenalin has been found in the blood during acute arterial hypertension which was accompanied by angina.
7. Attacks of anginal pain in patients with tumor of the suprarenal medullary tissue are apt to cease with removal of the tumor.
8. There is close similarity between the electrocardiographic picture following adrenalin injection and during anginal attacks.
9. The iodine level of the blood is increased after injection of adrenalin, after effort, on psychic emotion, and during attacks of angina.
10. Angina is frequently improved by thyroidectomy. Adrenalin response is reduced and the painful response to adrenalin disappears after this.
11. Roentgen irradiation of the suprarenal gland

is followed by a reduction of adrenalin output, and if large doses are given histological changes are noted. Roentgen therapy has proven to be a potent means in the treatment of angina. In patients relieved of pain, there is an accompanying normalization of the electrocardiographic pattern.

12. Iodine level was found diminished after effort in angina patients after irradiation.

ONE HUNDRED CASES OF ANGINA WITHOUT ANY MARKED SIGNS OF DECOMPENSATION

Technique of treatment consisted of series of six single treatments on consecutive days, three times on right and three times on left; each treatment 200 to 250 r, five millimeters copper plus one millimeter aluminum, 180 kilovolts, four milliamperes, size of fields ten by fifteen centimeters.

Twenty-one cases received one series, twenty-two cases had two series, twenty-six cases had three series, seven cases had four series. Twenty-four cases were entirely unsuccessful and had one to four series of treatments.

The duration of symptoms varied from two weeks to twenty-three years before treatment.

Two to four weeks elapsed before most cases received relief from pain. Of seventy-six improved recurrence occurred in twenty.

No effect was noted on blood pressure.

Sixty-two patients were almost entirely freed of pain for thirteen and one-half months.

No response was noted in twenty-four. Contraindications are:

1. Insufficiency of adrenals.
2. Coronary thrombosis within three months.
3. Tuberculosis of the kidney or peritoneum.
4. Cardiac decompensation.

The Treatment of Diabetes Mellitus with a Four-Meal Diet: A Means of Circumventing Certain Difficulties Arising in the Use of Protamine Zinc Insulin. H. M. Margolis, M.D., F.A.C.P., and V. W. Eisenstein, M.D., Pittsburgh, Pennsylvania. *Annals of Internal Medicine*, October, 1940.

The authors outline a plan of diet to prevent some of the disagreeable events that occur in the use of protamine zinc insulin. This consists of using a four-meal menu and endeavoring to provide sufficient carbohydrates during the night to prevent reactions, and to more readily control diurnal glycosuria and avoid supplementary injections of regular insulin.

Attention is called to the increasing reactive note of recent literature to the use of protamine zinc insulin. Some of the objections voiced have been inability of one dose to prevent postprandial glycosuria, inferior control of diabetes, and severe reactions from hypoglycemia.

The authors feel that a four-meal schedule so arranged that it would meet the peak action of protamine zinc insulin during the night must be adequate in carbohydrate, slowly absorbed and eaten late enough to be effective throughout the night. The menu was arranged as follows:

One-fifth of total intake at 8:00 A.M.

One-fifth at noon.

Two-fifths at 5:00 P.M.

One-fifth at 9:30 P.M.

The prescribed carbohydrate content was usually over 180 grams and the total glucose even up to 300 grams.

They conclude that the procedure provides a more adequate control, less chance of reaction, the satiety and morale of the patients are enhanced, and a safe, practical plan for office and clinic use is set up.

OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.
Suite 234 Doctors Building, Nashville

Carcinoma of the Cervix After Supravaginal Hysterectomy. Charles A. Behney. *American Journal of Obstetrics and Gynecology*, Volume 40, 780-786, November, 1940.

The material for this study was obtained from the records of sixty-seven patients in whom carcinoma of the cervix was recognized at some time after supravaginal hysterectomy had been performed for various indications. Forty-three of these cases, all white women, were observed on the Gynecologic Service of the University of Pennsylvania Hospital. The remaining twenty-four patients, fifteen of them white and nine colored, were treated in the Radiologic Department of the Philadelphia General Hospital.

Carcinoma of the cervix after supravaginal hysterectomy behaves similarly to the same disease when the fundus is retained. Its response to treatment is no worse than that of "cervix" cancer in general and in some clinics is better.

Distinctions are invariably made between the behavior of carcinoma of the cervix when the fundus is present and the same disease when the body of the uterus has been removed. "Stump cancer" is alleged to be more refractory to treatment. This has been attributed to difficulty in making proper application of radium in sufficient dosage when the uterine canal has been shortened by hysterectomy. Interference with circulation to the cervix due to contraction of scar tissue in the parametria, following the trauma of supravaginal hysterectomy, has been said to diminish the chance for curing the tumor of the stump.

In the course of our routine follow-up observations at the University and Philadelphia General Hospitals, we secured the impression that carcinoma of the cervix varied little in its characteristics, whether or not the fundus was present when the disease was discovered. The data presented show nothing peculiar about "stump" carcinoma with regard to age, initial symptoms, or histologic characteristics, as compared with carcinoma of cervixes from which the fundus has not been removed.

Approximately forty per cent of "stump" cancers recognized three years after subtotal hysterectomy

tomy, or within six months of the appearance of the first symptoms, were living and well five years after treatment. Subtotal hysterectomy appears to improve the chance of cure if performed before carcinoma of the cervix has been acquired. The probable development of vesicovaginal fistulas is greater than when the fundus is present. Fistulas are more often due to the disease than the result of treatment. Meticulous examination of the cervix should be made a part of every gynecologic examination. Areas which are abnormal should be removed for histologic study. These principles are no less important when removal of the fundus is contemplated. Complete hysterectomy is an excellent manner of dealing with disease of the cervix when the fundus is to be removed. However, in the hands of those whose experience is limited, supravaginal hysterectomy, combined with trachelectomy, is satisfactory and less hazardous.

OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.
Doctors Building, Nashville

Melanosarcoma of the Iris. W. B. Doherty. *American Journal of Ophthalmology*, March, 1939.

Doherty discusses sarcoma of the iris and reports three cases. He draws the following conclusions:

"1. From the histories of these tumors, it is reasonable to suppose that they are less malignant than those of the choroid or ciliary body. This may be due to the fact that they are more easily observed and immediately operated upon.

"2. A beginning malignancy of a melanoma of the iris, as viewed from a clinical standpoint, would manifest itself by: (1) an increase in size; (2) varying discolorations in the same growth; (3) an increased blood supply; (4) elliptical pupil and development of tension.

"3. A cyst and a melanosarcoma may coexist.

"4. The so-called ring sarcomas are extensions around the iris from the primary growth.

"The question whether pigmentation plays a role in the malignancy of these growths is a much disputed one. I believe it does. A deeply pigmented growth with pigment running wild must mean something. It is true that we do have malignant leucosarcomas, but do they metastasize very rapidly, and do they not occur most frequently in the young?"

ROENTGENOLOGY

By FRANKLIN B. BOGART, M.D.
Medical Arts Building, Chattanooga

Treatment of Large Protruding Carcinomas of the Skin and Lip by Irradiation and Surgery. H. B. Hunt. *American Journal of Roentgenology and Radium Therapy*, Vol. 44: No. 2, p. 254, August, 1940.

While these large protruding tumors are unsightly, the prognosis is not unfavorable when

properly treated, as they may reach considerable size before metastases occur. Opinions differ as to the best method of treatment, whether surgical, surface application of radium or X-ray, or the interstitial application of radium. All methods seem to give good results when properly used. The proper adaptation of the method of treatment to the individual case and the use of the method with which the particular therapist is most familiar probably yields the best results.

Eight cases are reported. Some were resected and the defect covered with a skin graft. In several a combination of interstitial low intensity radium needles plus surface irradiation with X-rays or radium was used. The use of adequate amounts of radiation was emphasized. Small doses of radium or of X-ray over long periods of time is condemned. Five to ten erythema doses were used during the three to five weeks' period. The fact is emphasized that many of these papillary tumors are remarkably radiosensitive. One advantage of treatment of these protruding tumors by irradiation is that when so treated the resulting scars are usually less deforming than when these lesions are treated surgically.

SUMMARY

1. Large protruding carcinomas occurring in the basal cell areas frequently show the alveolar or adenoid arrangement of basal cell lesions combined with keratinizing features simply adenoid epithelioma of Ewing.

2. Bulky squamous cell carcinomas tend to be moderately to highly anaplastic and show an abundant delicate vascular network which is associated with moderately high radiosensitivity.

3. The prognosis is reassuringly good since metastases to regional lymph nodes are remarkably infrequent, in view of the size and activity of the primary lesion.

4. Deformity following eradication of the neoplasm by irradiation is surprisingly little, due to only superficial invasion of healthy tissues by the neoplasm.

5. The tumors can be successfully treated by roentgen rays, radium, surgery, or a combination of these agents, according to the individual problem or in keeping with the equipment and experience of the therapist.

6. In general we would favor in: (a) Grade I carcinoma and radioresistant papillary tumors in general and large tumors overlying the brain—surgical resection and plastic repair. (b) Pendulous or polypoid carcinoma—irradiation of the base after removal of protuberant portion. (c) Usual sessile protruding tumor—preliminary roentgen rays followed by interstitial irradiation in the remnants of the base if and as indicated.

UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.
By G. A. WILLIAMSON, JR., M.D.
307 Doctors Building, Knoxville

Prevalence and Importance of Urea-Splitting Bacterial Infections of the Urinary Tract in the Formation of Calculi. Richard Chute and Howard Suby, Stone Clinic, Massachusetts General Hospital. *Journal of Urology*, November, 1940.

In the "stone clinic," a study is made of the pH of the urine, type of infection, composition of the stone, dietary abnormalities, metabolic disorders, etc., in order to correlate them and learn more about the formation of urinary calculi. It was observed that urea-splitting bacteria accounted for the stone formation in fifty-four per cent of the cases.

The urea-splitting organisms split the urea, causing ammonia formation which renders the urine alkaline. In this alkaline urine, amorphous phosphates, triple phosphates, and calcium carbonate crystals tend to precipitate, and in the presence of the infection and the crystals in the alkaline urine there is a great tendency to the formation of calculi.

In 1938 and 1939, ninety cases were studied, seventy-five per cent of which had infected urines. More than fifty of these cases had special urea-splitting cultures made. It was found that all cases of bacillus proteus, bacillus pyocyaneus, and bacillus influenza infections, and also cases of

staphylococcus, colon bacillus and nonhemolytic streptococcus with alkaline urines and all cases of mixed infections with these organisms were urea splitters.

In forty-nine cases of urea-splitting infections, mixed infections accounted for twenty-three cases, pure staphylococcus albus for ten, pure bacillus coli for nine, pure bacillus proteus for five, and pure bacillus influenza for two cases.

Of the twenty-three cases of mixed infections, seventeen or seventy-four per cent had a recurrence of stones. Calcium phosphate was always the predominating constituent in these recurrent calculi.

Twenty-four, or twenty-seven per cent, of the ninety cases had sterile urines. Among these, most of which were due to metabolic changes, more than half had a urinary pH of 5.5 or less, only three had a pH of seven or higher. In these cases the calculi were predominantly oxalate or uric acid. In only three was the stone composed chiefly of phosphate and carbonate, one of which was a case of hyperparathyroidism. There were seven, or twenty-nine per cent, recurrences in this group.

From the evidence found in this investigation, urea-splitting organisms are associated with the most frequent, the most active, and the most stubborn stone-forming cases. It is of great importance to eradicate these infections of the urinary tract, after the removal of calculi, to prevent recurrence.

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D. J. Zimmerman

New Market

R. R. Roach

HAMILTON COUNTY*Apison*

E. S. Blair

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E. R. Anderson
Wm. E. Anderson
J. J. Armstrong
H. M. Ausherman
C. H. Barnwell
S. H. Barrett
Alvin H. Benz
J. L. Bibb
E. L. Bishop
(Mhr. Davidson Co.)
T. R. Blanks
F. B. Bogart
J. W. Bradley
J. C. Brooks
L. P. Brooks
S. W. Brown
Wm. E. Bryan
E. F. Buchner
W. R. Buttram
Earl R. Campbell
Douglas Chamberlain
Cleo Chastain
Rupert M. Colemore
John L. Cooley
Polbert C. Crowell
Doyle E. Currey
J. Tom Currey
R. O. Currey
T. Lyles Davis
E. M. DeLay
Paul H. Dietrich
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A. F. Ebert
J. R. Fancher
John B. Fitts
Richard Van Fletcher
S. A. Fowler
J. Marsh Freere
O. C. Gass
E. A. Gilbert
C. H. Gurney
Russell Hackney
J. L. Hamilton
H. H. Hampton
Frank Harris
E. M. Harrison
Carl A. Hartung
John B. Haskins
Chas. R. Henry
H. P. Hewitt
Homer D. Hickey
J. M. Higginbotham
A. W. Hilliard
J. F. Hohs
John W. Hocker
J. McC. Hogshead
O. G. Hughes
P. R. Hysinger
D. Ishell
Burton L. Jacobs
Franklin Johnson
J. Paul Johnson
J. W. Johnson
D. B. Karr
Joe Killebrew
John J. Killeffer
Gene H. Kistler
H. P. Larimore
Chester L. Lassiter
Hiram A. Laws, Jr.
Stewart Lawwill
Phillip H. Livingston
H. D. Long
S. H. Long
T. J. Manson
S. S. Marchbanks
Fred E. Marsh
John R. Martin
M. A. Meacham
Augusta McCravey
J. B. McGhee
J. D. L. McPheeters
Cecil E. Newell
E. Dunbar Newell
E. T. Newell
Frank L. O'Connor
A. M. Patterson
R. L. Patterson
F. O. Pearson
W. D. L. Record
Chas. T. Reed
W. A. Reed
E. E. Reisman
E. E. Reisman, Jr.
Herman Renner
Gilbert Roberts
G. Madison Roberts

Robert C. Robertson
W. C. Sanford
Clarence Shaw
R. E. Shelton
W. J. Sheridan
John N. Shipp
Leopold Shumacker
J. A. Smith
Moore J. Smith
Harold J. Starr
John B. Steele
Willard Steele
W. A. Stem
Wm. G. Stephenson
John A. Steward
S. Fred Strain
J. B. Swafford
J. Hamilton Taylor
Chas. Roht. Thomas
Wm. E. Van Order
O. L. Von Canon
Raymond Wallace
Dan N. Williams
G. Victor Williams
Robert A. Wise
James C. Wright

Ooltewah

W. Dean Steward

Red Bank

J. McClure Richard

Soddy

E. L. Jenkins

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R. L. Cobb
J. G. Cottongim
B. F. McNulty
B. F. Peterson

Grand Junction

L. D. Pope

Middleton

J. Y. Alexander
P. M. Bishop

Silerton

W. H. Siler

Whiteville

G. T. Brinkley
A. Richards

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O. C. Doty
J. V. Hughes
S. L. Stephenson
O. H. Williams

HAWKINS COUNTY*Bulls Gap*

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(Mhr. Greene Cn.)
A. S. Yates
(Mhr. Greene Co.)

HAYWOOD COUNTY*Brounsville*

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John M. Chambers
T. C. Chapman
Roy M. Lanier
W. D. Poston
A. H. Sorrelle
John C. Thornton

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Geo. A. Brandon
R. M. Conger
J. F. Goff
C. J. Huntsman

Scotts Hill

R. L. Wylie

Wilder

C. E. Bolen

HENRY COUNTY*Cottage Grove*

Bert Paschall

Paris

George D. Boone
J. W. Dicoet
Arthur Dunlap
R. Graham Fish
Barton McSwain
Geo. R. McSwain
J. H. McSwain
W. G. Rhea
Elroy Scruggs
Henriette Veltman
C. D. Wilder

Puryear

A. F. Paschal

Springville

R. J. Perry

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W. K. Edwards
J. W. Frost
C. V. Stephenson

Lyles

Chas. G. Bowers
Margaretta K. Bowers

Only

L. F. Pritchard

HOUSTON COUNTY*Erin*

O. H. Atkins
(Mhr. Montgomery Co.)

HUMPHREYS COUNTY*Waverly*

M. R. Beyer
H. C. Capps

JACKSON COUNTY*Gainesboro*

L. R. Anderson
E. W. Draper
R. C. Gaw
C. E. Reeves

JEFFERSON COUNTY*Jefferson City*

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(Mhr. Knox Co.)
T. E. Wright
(Mhr. Knox Co.)

Strauberry Plains

B. E. Cline
(Mhr. Knox Co.)
Roland M. Webster
(Mhr. Knox Co.)

White Pine

J. I. Huggins

JOHNSON COUNTY*Mountain City*

J. R. Butler
R. O. Glenn

Shouns

E. Bruce Rhea

KNOX COUNTY*Byington*

A. R. Garrison

Concord

M. F. Cohn

Corryton

A. D. Simmons

Fountain City

B. B. Mitchell
(Mhr. Wash. Co.)

J. M. Van De Griff

Joe L. Raulston

Inskip

J. B. Parker

Knoxville

Eugene Ahernrombie
Herbert Acuff
Eben Alexander
Chas. Armstrong
W. S. Austin
Troy P. Bagwell
Tom R. Barry
Spencer Bell
M. L. Black
W. A. Boies
L. A. Brendle
(Mhr. McMinn Co.)
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P. H. Cardwell
C. J. Carmichael
H. L. Carroll
Jack Chesney
H. E. Christenherry
H. E. Christenherry, Jr.
W. F. Christenherry
C. L. Chumley
Chas. F. Clayton
Edward S. Clayton
Sam M. Cooper
K. C. Copenhaver
M. M. Copenhaver
William R. Cross
H. K. Cunningham
R. V. Dupue
W. A. DeSautelle
W. T. DeSautelle
W. F. Dorsey
Thos. B. Drinnen
Horton G. Du Bord
(Mhr. Anderson Co.)
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E. M. Edington
W. H. Enneis
Frank Faulkner
Edgar H. Ford
J. L. Fuqua
J. H. Gammon
Glen D. Grubb
E. A. Guynes
J. R. Hamilton
B. I. Harrison
O. E. Harvey
Louis A. Haun
George Henson
Jesse C. Hill
John R. Hill
Oliver W. Hill, Jr.
Victor Hill
S. H. Hodge
Claud Huffman
A. G. Hulstедler
Harry H. Jenkins
C. B. Jones
Frank E. Jones
(Mhr. Fayette-Harde-
man Co.)
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H. L. Kitts
A. Hobart Lancaster
Robert P. Layman
J. Marshall Lea
Robert S. Leach
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Forest S. LeTellier
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Wm. N. Lynn
W. D. Martin
(Mhr. Davidson Co.)
H. H. McCampbell
T. L. McCarter
A. T. McClain
W. C. McClain
Richard McLlwaine
R. L. McReynolds
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Ralph Monger
John L. Montgomery
Chas. F. Mooney
John D. Moore
Owen Moore
J. F. Morrow
Joel C. Morris
Wm. S. Muse
J. B. Naive
J. B. Neil
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Frank O. Nichols
R. P. Oppenheimer
B. M. Overholt
Nicholas Pappas
Roht. F. Patterson, Jr.
Herschel Penn

Jarrell Penn

H. Dewey Peters

S. B. Peters

S. Joe Platt

Herbert L. Pope

W. W. Potter

Bruce R. Powers

R. M. Powell

Hugh Reaves

Robt. G. Reaves

W. D. Richards

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M. S. Roberts

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A. L. Rule

Wm. A. Shelton

Chas. C. Smeltzer

Andrew Smith

Joe T. Smith

Philip Smith

Rufus Smith

Vernon I. Smith

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John R. Smoot

J. M. Stockman

G. W. Stone

W. H. Tanksley, Jr.

(Mhr. Sullivan-John-
son Co.)

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Phillip C. Thomas

D. R. Thomas

George Thorpe

Geo. M. Trotter

William B. Turner

R. G. Waterhouse

Alvin J. Weber, Jr.

Fred West

Leon J. Willien

John Wilson

G. A. Williamson

E. G. Wood

R. B. Wood

W. P. Wood

R. M. Young

E. Russell Zemp

Mascot

H. J. Bolen

Powell

M. F. Cruze

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W. L. Sumners

Tiptonville

R. W. Griffin

W. T. Rainey

E. B. Smythe

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J. L. Dunavant

L. W. Frame

J. B. Lackey

J. R. Lewis

Thos. E. Miller

Henning

Thos. F. Pipkin

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Laurensburg

V. H. Crowder

J. W. Danley

L. C. Harris

T. A. McAmis

C. C. Stockard

T. J. Stockard

Fayetteville

Ben H. Marshall
R. E. McCown
J. V. McRady
T. A. Patrick
M. C. Woodfin

Huntland

K. P. Brown

Petersburg

W. S. Joplin
J. T. Gordon

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J. A. Leeper
W. D. Padgett
(Mbr. Knox Co.)
Halbert Robinson
R. V. Taylor

Loudon

Arthur P. Harrison
W. B. Harrison
J. R. Watkins

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W. B. Camp
J. Y. Freeman
D. D. Howser

Red Boiling Springs

G. Ulleth

MADISON COUNTY**Bemis**

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Kelly Smythe

Gadsden

F. C. James

Jackson

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B. C. Arnold
Glen Batten
G. H. Berryhill
G. W. Brasher
Cecil H. Brown
R. S. Brown
Swan Burrus
Tate B. Collins
J. L. Crook
J. E. Douglass
W. B. Eason
W. T. Fitts
Earl Goyer
B. L. Green
Robert S. Hellman
S. M. Herron
G. Frank Jones
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J. W. McClaran
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J. E. Powers
Alvin B. Rosenbloom
W. G. Saunders
Richard Taylor
J. R. Thompson, Jr.
Chas. F. Webb
R. B. White
G. L. Williamson
Paul E. Wylie

Mercer

J. M. Curry
Glen T. Scott

Pinson

R. S. Hearn

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(Mbr. Hamilton Co.)

South Pittsburg

Wm. K. Owen
(Mbr. Hamilton Co.)

Whitwell

C. A. Clements

MARSHALL COUNTY**Belfast**

J. W. Reed
(Mbr. Bedford Co.)

Chapel Hill

A. L. Cooper
(Mbr. Bedford Co.)

Cornersville

W. F. Copeland
(Mbr. Giles Co.)

Petersburg

J. W. Sutton
(Mbr. Bedford Co.)

MAURY COUNTY**Columbia**

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C. K. Busby
Wm. N. Cook
J. T. Hart
Robin Lyles
James B. Miller
O. J. Porter
R. S. Perry
E. K. Provost
E. M. Ragsdale
G. C. Williamson
J. W. Wilkes
Watt Yeiser

Hampshire

W. R. Webb

Mt. Pleasant

G. C. English
J. H. Jones
C. D. Walton
Leon S. Ward

Springhill

B. H. Woodard

Williamsport

H. O. Anderson

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W. R. Arrants
R. A. Brock
R. W. Epperson
C. O. Foree
Edwin Force
J. R. Nankivell
Harry Waggoner

Benton

J. H. Lillard

Decatur

W. J. Abel

Englewood

D. P. Brendle

Etowah

E. R. Donathan
M. L. Hefley
S. Boyd McClary, Jr.
W. S. Moore
Luther Curtis Ogle

McNAIRY COUNTY**Selmer**

O. L. Hill
(Mbr. Shelby Co.)
T. N. Humphrey
H. C. Sanders
E. M. Smith
John R. Smith

Stantonville

E. G. Sanders

MONROE COUNTY**Madisonville**

B. W. Bagwell
R. C. Kimbrough
H. C. Shearer

Sweetwater

L. L. Barnes
W. J. Cameron
J. A. Hardin
Douglas Hener
R. M. Price
T. M. Roberts

Tellico Plains

W. A. Rogers
M. D. Shearer

Vonore

J. A. McCollum

MONTGOMERY COUNTY**Clarksville**

H. H. Edmonson
V. H. Griffin
I. E. Hunt
Philip L. Lyle
R. B. Macon
F. J. Malone
E. B. Ross
John W. Ross
Bryce Runyon
F. J. Runyon
M. L. Shelby
Paul E. Wilson
R. M. Workman

MORGAN COUNTY**Oakdale**

J. H. Carr
(Mbr. Roane Co.)

OBION COUNTY**Troy**

E. A. Boswell
(Mbr. Dyer Lake and
Crockett)
W. F. Roberts

Union City

J. D. Carlton
Robert Darnall
F. B. Kimzey
D. S. Latimer
Robt. G. Latimer
(Mbr. Dyer, Lake, and
Crockett Cos.)
M. T. Tipton

OVERTON COUNTY**Livingston**

W. M. Breeding
W. M. Brown
J. D. Capps
A. B. Qualls
H. B. Nevans
Myrtle L. Smith

PERRY COUNTY**Clifton**

James T. Keeton

Flatwoods

W. E. Boyce

Linden

O. A. Kirk

POLK COUNTY**Copperhill**

W. Y. Gilliam
Thomas J. Hicks
H. P. Hyde
C. W. Strauss

Ducktown

A. J. Guinn
H. H. Hyatt
(Mbr. Hamilton Co.)

Isabella

F. O. Geisler

PUTNAM COUNTY**Algood**

J. T. Moore

Cookeville

Lex Dyer
W. A. Howard
Thurman Shipley
H. H. Taylor
J. Fred Terry
R. L. Witherington

Granville

L. M. Freeman

Monterey

T. M. Crain

RHEA COUNTY**Dayton**

Albert Broyles
(Mbr. Hamilton Co.)
W. A. Thomison
(Mbr. Hamilton Co.)

ROANE COUNTY**Harriman**

Thos. L. Bowman
Hy M. Carr
W. W. Hill
L. A. Killeffer
F. A. Neergaard

Kingston

J. C. Fly
Nat Sugarman

Rockwood

F. D. Owings
Thos. H. Phillips
R. F. Regester
G. E. Wilson

ROBERTSON COUNTY**Adams**

J. R. Connell

Cedar Hill

Robert H. Elder
(Mbr. White Co.)

Ridgetop

W. S. Rude

Springfield

C. M. Banks
W. B. Dye
John S. Freeman
J. S. Hawkins
A. R. Kempf
R. L. Mathews
W. W. Porter
W. P. Stone
J. E. Wilkinson

White House

R. H. Hirsh

RUTHERFORD COUNTY**Lascassas**

J. C. Kelton

Murfreesboro

J. B. Black
V. S. Campbell
Harvey W. Carter
John F. Cason
J. R. Gott
A. J. Jamison
M. B. Murfree
J. C. Overall
I. E. Phillips
(Mbr. Overton Co.)
B. W. Rawlins
W. T. Robison
W. V. Sanford
J. A. Scott
Sam L. Wiles

Smyrna

J. M. Shipp

SCOTT COUNTY**Huntsville**

J. I. Foster

Norma

D. T. Chambers

Oncida

W. S. Cooper
T. L. Phillips
M. E. Thompson
Milford Thompson

Robbins

Pitney Phillips

SEVIER COUNTY**Sevierville**

H. A. Sauberli
Robt. F. Thomas
C. P. Wilson
O. H. Yarberty

SHELBY COUNTY**Brunswick**

C. C. Chaffee

Collierville

L. P. Pearce

Cordova

John T. Carter, Jr.

C. A. Chaffee

Forest Hill

J. E. Clark

Memphis

Shields Abernathy
W. M. Adams
Justin H. Adler
W. G. Alford
C. D. Allen
Jacob Alperin
S. B. Anderson
W. D. Anderson
W. S. Anderson
C. G. Andrews
J. L. Andrews
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J. C. Ayres, Jr.
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Sam Blackwell
C. D. Blasingame
A. L. Blecker
Phil Blecker
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James W. Bodley
Robt. F. Bonner
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R. L. Bourland
R. L. Bowlin
H. B. Boyd
L. F. Boyd
W. F. Boyd
A. C. Bradham
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W. T. Braun, Jr.
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L. L. Carter
Hughes Chandler
W. C. Chaney
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R. B. Chrisman, Jr.
J. C. Clark
W. F. Clary
J. D. Cleveland
E. W. Cocke
I. S. Coe
W. C. Colbert
S. W. Coley
Casa Collier
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P. Thurman Crawford
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Howard Curl
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Raleigh R. Davenport
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John L. Dies
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J. M. Dorris
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D. W. Goltman
J. S. Goltman
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Nicholas Gotten
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W. R. Graves
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S. N. Gray
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Lewis C. Ramsay
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M. J. Roach
F. L. Roberts
(Mbr. Gibson Co.)
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J. E. Robinson
W. W. Robinson
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R. F. McCrary, 605 Walnut St., Knoxville.....	Knox
Walter S. Nash, 522 W. Church Ave., Knoxville.....	Knox
Olin Rodgers, Kingston Pike, Knoxville.....	Knox
Geo. T. Wilhelm, 820 Temple Ave., Knoxville.....	Knox
LeRoy Young, 1700 W. Clinch Ave., Knoxville.....	Knox
Hernon Hawkins, Jackson.....	Madison
J. D. Hopper, Jackson.....	Madison
A. W. Lewis, Copperhill.....	Polk
W. B. Burns, Medical Arts Bldg., Memphis.....	Shelby
T. N. Coppedge, 1607 Harbert Ave., Memphis.....	Shelby
P. D. Elcan, 250 Buena Vista St., Memphis.....	Shelby
E. E. Francis, Exchange Bldg., Memphis.....	Shelby
Chas. C. King, 1475 Linden Ave., Memphis.....	Shelby
F. M. Malone, Capleville.....	Shelby
J. B. McNulty, 217 Stonewall Place, Memphis.....	Shelby
B. F. Turner, Madison Ave., Memphis.....	Shelby
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SUBJECTS

Abdomen, The Acute—E. G. Kelly, M.D., Memphis	375	Cardiospasm, Case Report: Pellagra Due to— Frederick E. Marsh, M.D., Chattanooga	54
Abscess and Meningitis Caused by Type III Pneumococci—Cure with Sulfapyridine, Brain—Thos. F. Frist, M.D., and Elkin Rippy, M.D., Nashville	8	Case Report: Pellagra Due to Cardiospasm— Frederick E. Marsh, M.D., Chattanooga	54
Abstracts of Current Literature	32,	Chest, Treatment of Injuries of the—Duane Carr, M.D., Memphis	438
74, 112, 152, 191, 234, 280, 326, 365, 411, 452, 493		Childhood, Brain Tumors in—Cobb Pilcher, M.D., Nashville	1
Acquired Syphilis in Childhood—Report of a Field Study—C. B. Tucker, M.D., Nashville	143	Children, Contact Infections in—Wm. E. Van Order, M.D., Chattanooga	350
Acute Abdomen, The—E. G. Kelly, M.D., Mem- phis	375	Chronic Trigonitis: Its Effect on the Trigonal Epithelium—H. L. Douglass, M.D., Nashville	261
Acute Rheumatic Fever—J. J. Hobson, M.D., Memphis	60	Clinic Hospital—Its Place in the Community, The Small Town—W. G. Rhea, M.D., Paris	197
Allergy Other Than Asthma, Manifestations of—Alfred M. Goltman, M.D., F.A.C.P., Memphis	86	Coming Meetings	31,
American Health Program, An—Nathan B. Van Etten, M.D., New York City	159	73, 112, 151, 191, 234, 280, 325, 364, 411	
Analysis of Metrazol Therapy, Together with a Theory of Interpretation, An—J. F. Blalock, Jr., M.D., Central State Hospital, Nashville; O. S. Hawk, M.D., Central State Hospital, Nashville; Paul L. Boynton, Ph.D., Pro- fessor of Psychology, George Peabody Col- lege, Nashville	353	Common Eye Conditions in the Field of the General Practitioner, Management of—Ed- gar L. Grubb, M.D., Knoxville	94
Analysis of Mortality in Acute Appendicitis and Appendiceal Peritonitis, An—J. Paul Baird, M.D., Dyersburg	243	Convention Notes	106
Anemias, The Rationale of Splenectomy in the Treatment of Certain—George M. Curtis, M.D., F.A.C.S., Professor of Surgery, The Ohio State University, Columbus, Ohio	137	Contact Infections in Children—Wm. E. Van Order, M.D., Chattanooga	350
Appendicitis and Appendiceal Peritonitis, An Analysis of Mortality in Acute—J. Paul Baird, M.D., Dyersburg	243	Contraception: A Medical Problem of Growing Importance—Harry H. Jenkins, M.D., Knox- ville	342
Asthma in General Practice—Tolbert C. Crow- ell, M.D., Chattanooga	55	Crippled Children, Some Observations on the State Program for the Relief of—R. W. Billington, M.D., Nashville	393
Asthma, Manifestations of Allergy Other Than —Alfred M. Goltman, M.D., F.A.C.P., Mem- phis	86	Deaths	27,
Aspects of Gall-Bladder Disease, The Medical —Lyle Motley, M.D., F.A.C.P., Memphis, Associate Professor of Medicine, College of Medicine, University of Tennessee	79	67, 102, 148, 186, 226, 277, 322, 362, 445, 489	
Aspects of the Menopause, The Medical— Lucius E. Burch, M.D., F.A.C.S., Nashville	208	Discussion of the Basic Science Bill, A.	292
Basic Science Bill, The	289	Disease, The Medical Aspects of Gall-Bladder —Lyle Motley, M.D., F.A.C.P., Memphis, Associate Professor of Medicine, College of Medicine, University of Tennessee	79
Bill, A	52	Disease on the Eye, The Effect of Sinus—M. M. Cullom, M.D., Nashville	39
Book Review	156, 330, 371, 416	Drainage Tube, A New and Original—Edward T. Newell, B.S., M.D., F.A.C.S., Chattanooga	250
Brain Abscess and Meningitis Caused by Type III Pneumococci—Cure with Sulfapyridine —Thos. F. Frist, M.D., and Elkin Rippy, M.D., Nashville	8	Drugs in Treatment of Heart Disease—James L. Bibb, M.D., Chattanooga	213
Brain Tumors in Childhood—Cobb Pilcher, M.D., Nashville	1	Drugs, The Toxic Manifestations of Sulfanil- amide and Allied—Frederick E. Marsh, M.D., Chattanooga	305
Brucellosis, With Report of Cases—W. R. Blue, M.D., Memphis	9	Economics and the Medical Profession, Planned J. Howard Pew	255
Carcinoma of the Lip, The Treatment of— George S. Johnson, M.D., Nashville	268	Eczema in Children, The Etiology and Treat- ment of—Wm. R. Graves, B.S., M.D., F.A. A.P., Memphis	400
		Editorial	23,
		66, 97, 146, 184, 224, 275, 320, 361, 407, 444, 488	
		Effect of Sinus Disease on the Eye, The—M. M. Cullom, M.D., Nashville	39
		Elbow, The Management of Fractures About the—Troy Bagwell, M.D., F.A.C.S., Knox- ville	130
		Endameba Histolytica Infections, Some Clin- ical Manifestations Resulting from—Edward L. Turner, M.D., and William A. Beck, M.D., Nashville	203

Epithelium, Chronic Trigonitis: Its Effect on the Trigonal—H. L. Douglass, M.D., Nashville	261	The Restoration of Function After—Duncan Eve, M.D., Nashville	119
Etiology and Treatment of Eczema in Children, The—Wm. R. Graves, B.S., M.S., F.A.A.P., Memphis	400	Investigation of the Contracted Pelvis, The Functional—B. Lorinez, M.D., Director of the Hospital for Women, Ujpest, Hungary ..	48
Extremities, The Restoration of Function After Injury With Special Reference to—Duncan Eve, M.D., Nashville	119	Lesions About the Sella Turcica and Optic Chiasm, Illustrative—Nicholas Gotten, M.D., F.A.C.S., Memphis	333
Eye Conditions in the Field of the General Practitioner, Management of Common—Edgar L. Grubb, M.D., Knoxville	94	Lip, The Treatment of Carcinoma of the—George S. Johnson, M.D., Nashville	268
Eye, The Effect of Sinus Disease on the—M. M. Cullom, M.D., Nashville	39	List of Officers of the Tennessee State Medical Association	36, 77, 116, 157, 196, 240, 286, 331, 373, 417, 456, 497
Face, The Treatment of Wounds of the—Rollin A. Daniel, Jr., M.D., Nashville	419	Lower Extremity Length Inequality, The Operative Correction of—C. H. Crego, Jr., M.D., St. Louis, Missouri	124
Femur, The Treatment of Fractures of the Neck of the—E. Dunbar Newell, M.D.; J. Marsh Frere, M.D.; J. M. Higginbotham, M.D., Chattanooga	427	Management of Common Eye Conditions in the Field of the General Practitioner—Edgar L. Grubb, M.D., Knoxville	94
Fever, Acute Rheumatic—J. J. Hobson, M.D., Memphis	60	Management of Fractures About the Elbow, The—Troy Bagwell, M.D., F.A.C.S., Knoxville	130
Fractures About the Elbow, The Management of—Troy Bagwell, M.D., F.A.C.S., Knoxville ..	130	Manifestations of Allergy Other Than Asthma—Alfred M. Goltman, M.D., F.A.C.P., Memphis	86
Fractures of the Neck of the Femur, The Treatment of—E. Dunbar Newell, M.D.; J. Marsh Frere, M.D.; J. M. Higginbotham, M.D., Chattanooga	427	Manifestations of Sulfanilamide and Allied Drugs, The Toxic—Frederick E. Marsh, M.D., Chattanooga	305
Functional Investigation of the Contracted Pelvis, The—B. Lorinez, M.D., Director of the Hospital for Women, Ujpest, Hungary ..	48	Manifestations Resulting from Endameba Histolytica Infections, Some Clinical—Edward L. Turner, M.D., and William A. Beck, M.D., Nashville	203
Gall-Bladder Disease, The Medical Aspects of—Lyle Motley, M.D., F.A.C.P., Memphis, Associate Professor of Medicine, College of Medicine, University of Tennessee	79	Medical Aspects of Gall-Bladder Disease, The—Lyle Motley, M.D., F.A.C.P., Memphis, Associate Professor of Medicine, College of Medicine, University of Tennessee	79
Gastritis—Jack Witherspoon, M.D., Nashville ..	309	Medical Aspects of the Menopause, The—Lucius E. Burch, M.D., F.A.C.S., Nashville	208
Gastrointestinal Symptoms of Urological Conditions—C. H. Barnwell, M.D., Chattanooga ..	386	Medical Participation in Selective Service—Charles B. Spruit, Lieutenant Colonel (M. C.), General Staff Corps, United States Army; Medical Adviser to the Joint Army and Navy Selective Service Committee, Washington, D. C.	382
Gavel Presentation	180	Medical Problem of Growing Importance, A: Contraception—Harry H. Jenkins, M.D., Knoxville	342
General Practice, Asthma in—Tolbert C. Crowell, M.D., Chattanooga	55	Medical Societies	29, 71, 108, 149, 189, 231, 279, 324, 363, 409, 449, 490
Haggard, Dr. W. D., A Tribute to—W. S. Leathers, M.D., Nashville	84	Medicine, Sulfanilamide and Its Compounds: Their Uses in—J. O. Manier, M.D., Nashville	296
Head Injuries—Richard G. Waterhouse, M.D., Knoxville	432	Meningitis Caused by Type III Pneumococci—Cure with Sulfapyridine, Brain, Abscess and—Thos. F. Frist, M.D., and Elkin Rippey, M.D., Nashville	8
Heart Disease, Drugs in Treatment of—James L. Bibb, M.D., Chattanooga	213	Menopause, The Medical Aspects of the—Lucius E. Burch, M.D., F.A.C.S., Nashville	208
Index to Proceedings of the House of Delegates ..	487	Metrazol Therapy, Together With a Theory of Interpretation, An Analysis of—J. F. Blacklock, Jr., M.D., Central State Hospital,	
Infections, Some Clinical Manifestations Resulting from Endameba Histolytica—Edward L. Turner, M.D., and William A. Beck, M.D., Nashville	203		
Infections in Children, Contact—Wm. E. Van Order, M.D., Chattanooga	350		
Illustrative Lesions About the Sella Turcica and Optic Chiasm—Nicholas Gotten, M.D., F.A.C.S., Memphis	333		
Injuries, Head—Richard G. Waterhouse, M.D., Knoxville	432		
Injuries of the Chest, Treatment of—Duane Carr, M.D., Memphis	438		
Injury With Special Reference to Extremities,			

Nashville; O. S. Hauk, M.D., Central State Hospital, Nashville; Paul L. Boynton, Ph.D., Professor of Psychology, George Peabody College, Nashville	353	gates of the American Medical Association at Its Annual Meeting in New York, June 10 to 14, 1940.....	317
Mode of Action of Sulfanilamide—Milton T. Bush, Ph.D., Nashville.....	294	Report of a Field Study—Acquired Syphilis in Childhood—C. B. Tucker, M.D., Nashville..	143
Mortality in Acute Appendicitis and Appendiceal Peritonitis, An Analysis of—J. Paul Baird, M.D., Dyersburg.....	243	Resolutions...27, 68, 148, 186, 226, 277, 322, 362, 445	
New and Original Drainage Tube, A—Edward T. Newell, B.S., M.D., F.A.C.S., Chattanooga	250	Restoration of Function After Injury With Special Reference to Extremities, The—Duncan Eve, M.D., Nashville.....	119
News Notes and Comments.....	28,	Rheumatic Fever, Acute—J. J. Hobson, M.D., Memphis	60
70, 102, 148, 187, 229, 278, 323, 408, 446,	489	Scarlet Fever, Sulfanilamide as a Prophylaxis in—C. B. Laughlin, M.D., Greeneville.....	223
New Wagner Bill, The.....	66	Sella Turcica and Optic Chiasm, Illustrative Lesions About the—Nicholas Gotten, M.D., F.A.C.S., Memphis	333
Obstetrics, A Ten-Year Review of Local—Edward F. Buchner, Jr., M.D., Chattanooga	91	Sinus Disease on the Eye, The Effect of—M. M. Cullom, M.D., Nashville.....	39
Operative Correction of Lower Extremity Length Inequality, The—C. H. Crego, Jr., M.D., St. Louis, Missouri.....	124	Small Town Clinic Hospital—Its Place in the Community, The—W. G. Rhea, M.D., Paris	197
Optic Chiasm, Illustrative Lesions About the Sella Turcica and—Nicholas Gotten, M.D., F.A.C.S., Memphis	333	Some Clinical Manifestations Resulting from Endameba Histolytica Infections—Edward L. Turner, M.D., and William A. Beck, M.D., Nashville	203
Other Medical Societies.....	30,	Some Observations on the State Program for the Relief of Crippled Children—R. W. Billington, M.D., Nashville.....	393
73, 110, 151, 190, 232, 280, 324, 410,	451	Splenectomy in the Treatment of Certain Anemias, The Rationale of—George M. Curtis, M.D., F.A.C.S., Professor of Surgery, The Ohio State University, Columbus, Ohio.....	137
Pellagra Due to Cardiospasm: Case Report—Frederick E. Marsh, M.D., Chattanooga....	54	Standing Committees	37,
Pelvis, The Functional Investigation of the Contracted—B. Lorinez, M.D., Director of the Hospital for Women, Ujpest, Hungary..	48	78, 117, 158, 195, 241, 287, 332, 374, 418, 457, 498	
Peritonitis, An Analysis of Mortality in Acute Appendicitis and Appendiceal—J. Paul Baird, M.D., Dyersburg.....	243	Sulcus Tumor, Superior Pulmonary—Henry P. Gotten, M.D., Memphis.....	44
Planned Economies and the Medical Profession—J. Howard Pew.....	255	Sulfanilamide and Allied Drugs, The Toxic Manifestations of—Frederick E. Marsh, M.D., Chattanooga	305
Pneumococci—Cure With Sulfapyradine, Brain Abscess and Meningitis Caused by Type III—Thos. F. Frist, M.D., and Elkin Rippey, M.D., Nashville	8	Sulfanilamide and Its Compounds: Their Uses in Medicine—J. O. Manier, M.D., Nashville	296
Practice, Asthma in General—Tolbert C. Crowell, M.D., Chattanooga.....	55	Sulfanilamide as a Prophylaxis in Scarlet Fever—C. B. Laughlin, M.D., Greeneville..	223
Private Practice of Public Health—James C. Overall, M.D., Nashville.....	405	Sulfanilamide in Surgery—Morton J. Tendler, B.D., M.D., F.A.C.S., Memphis.....	300
Proceedings of the House of Delegates.....	459	Sulfanilamide, Mode of Action of—Milton T. Bush, Ph.D., Nashville.....	294
Program of the Tennessee State Medical Association, Tentative.....	99	Sulfapyridine, Brain Abscess and Meningitis Caused by Type III Pneumococci—Cure with—Thos. F. Frist, M.D., and Elkin Rippey, M.D., Nashville.....	8
Prophylaxis in Scarlet Fever, Sulfanilamide as a—C. B. Laughlin, M.D., Greeneville....	223	Superior Pulmonary Sulcus Tumor—Henry B. Gotten, M.D., Memphis.....	44
Prothrombin Deficiency and Vitamin K in the Newborn Period—Willis H. Thompson, M.D., Minneapolis, Minn.	218	Surgery, Sulfanilamide in—Morton J. Tendler, B.S., M.D., F.A.C.S., Memphis.....	300
Public Health, Private Practice of—James C. Overall, M.D., Nashville.....	405	Syphilis in Childhood—Report of a Field Study, Acquired—C. B. Tucker, M.D., Nashville	143
Pulmonary Sulcus Tumor, Superior—Henry B. Gotten, M.D., Memphis.....	44	Ten-Year Review of Local Obstetrics, A—Edward F. Buchner, Jr., M.D., Chattanooga..	91
Rationale of Splenectomy in the Treatment of Certain Anemias, The—George M. Curtis, M.D., F.A.C.S., Professor of Surgery, Ohio State University, Columbus, Ohio.....	137	Tennessee State Medical Association, Tentative Program of the	99
Report of Cases, Brucellosis With—W. R. Blue, M.D., Memphis.....	9	Tentative Program of the Tennessee State Medical Association	99
Report of the Delegates of the Tennessee State Medical Association to the House of Dele-			

Toxic Manifestations of Sulfanilamide and Allied Drugs, The—Frederick E. Marsh, M.D., Chattanooga	305
Tribute to Dr. W. D. Haggard, A—W. S. Leathers, M.D., Nashville	84
Tribute to Dr. William David Haggard	360
Treatment of Carcinoma of the Lip, The—George S. Johnson, M.D., Nashville	268
Treatment of Eczema in Children, The Etiology and—Wm. R. Graves, B.S., M.D., F.A.A.P., Memphis	400
Treatment of Fractures of the Neck of the Femur, The—E. Dunbar Newell, M.D.; J. Marsh Frere, M.D.; J. M. Higginbotham, M.D., Chattanooga	427
Treatment of Heart Disease, Drugs in—James L. Bibb, M.D., Chattanooga	213
Treatment of Injuries of the Chest—Duane Carr, M.D., Memphis	438
Treatment of Wounds of the Face, The—Rollin A. Daniel, M.D., Nashville	419
Trigonitis: Its Effect on the Trigonal Epithelium, Chronic—H. L. Douglass, M.D., Nashville	261
Tumor, Superior Pulmonary Sulcus—Henry B. Gotten, M.D., Memphis	44
Tumors, in Childhood, Brain—Cobb Pilcher, M.D., Nashville	1
Urological Conditions, Gastrointestinal Symptoms of—C. H. Barnwell, M.D., Chattanooga	386
Vitamin K in the Newborn Period, Prothrombin Deficiency and—Willis H. Thompson, M.D., Minneapolis, Minnesota	218
Ways and Means of Improving Medical Leadership	24
Why Medicine?—W. O. Baird, M.D., Henderson	168
Woman's Auxiliary	28,
70, 107, 148, 188, 229, 279, 409, 448,	489
Wounds of the Face, The Treatment of—Rollin A. Daniel, Jr., M.D., Nashville	419

AUTHORS

Bagwell, Troy, M.D., F.A.C.S., Knoxville—"The Management of Fractures About the Elbow"	130
Baird, J. Paul, M.D., Dyersburg—"An Analysis of Mortality in Acute Appendicitis and Appendiceal Peritonitis"	243
Baird, W. O., M.D., Henderson—"Why Medicine?"	168
Barnwell, C. H., M.D., Chattanooga—"Gastrointestinal Symptoms of Urological Conditions"	386
Beck, William A., M.D., Nashville—"Some Clinical Manifestations Resulting from Endameba Histolytica Infections"	203
Bibb, James L., M.D., Chattanooga—"Drugs in Treatment of Heart Disease"	213
Billington, R. W., M.D., Nashville—"Some Observations on the State Program for the Relief of Crippled Children"	393
Blalock, J. F., Jr., M.D., Central State Hospital, Nashville—"An Analysis of Metrazol Therapy, Together With a Theory of Interpretation"	353
Blue, W. R., M.D., Memphis—"Brucellosis, With Report of Cases"	9
Boynton, Paul L., Ph.D., Professor of Psychology, George Peabody College, Nashville—"An Analysis of Metrazol Therapy, Together With a Theory of Interpretation"	353
Buchner, Edward F., Jr., M.D., Chattanooga—"A Ten-Year Review of Local Obstetrics"	91
Burch, Lucius E., M.D., F.A.C.S., Nashville—"The Medical Aspects of the Menopause"	208
Bush, Milton T., Ph.D., Nashville—"Mode of Action of Sulfanilamide"	294
Carr, Duane, M.D., Memphis—"Treatment of Injuries of the Chest"	438
Crego, C. H., Jr., M.D., St. Louis, Missouri—"The Operative Correction of Lower Extremity Length Inequality"	124
Crowell, Tolbert C., M.D., Chattanooga—"Asthma in General Practice"	55
Cullom, M. M., M.D., Nashville—"The Effect of Sinus Disease on the Eye"	39
Curtis, George M., M.D., F.A.C.S., Professor of Surgery, Ohio State University, Columbus, Ohio—"The Rationale of Splenectomy in the Treatment of Certain Anemias"	137
Daniel, Rollin A., Jr., M.D., Nashville—"The Treatment of Wounds of the Face"	419
Douglass, H. L., M.D., Nashville—"Chronic Trigonitis: Its Effect on the Trigonal Epithelium"	261
Eve, Duncan, M.D., Nashville—"The Restoration of Function After Injury with Special Reference to Extremities"	119
Frere, J. Marsh, M.D., Chattanooga—"The Treatment of Fractures of the Neck of the Femur"	427
Frist, Thos. F., M.D., Nashville—"Brain Abscess and Meningitis Caused by Type III Pneumococci—Cure with Sulfapyridine"	8
Goltman, Alfred M., M.D., F.A.C.P., Memphis—"Manifestations of Allergy Other Than Asthma"	86
Gotten, Henry B., M.D., 20 South Dunlap, Memphis—"Superior Pulmonary Sulcus Tumor"	44
Gotten, Nicholas, M.D., F.A.C.S., Memphis—"Illustrative Lesions About the Sella Turcica and Optic Chiasm"	333
Grubb, Edgar L., M.D., Knoxville—"Management of Common Eye Conditions in the Field of the General Practitioner"	94
Graves, Wm. R., B.S., M.D., F.A.A.P., Memphis—"The Etiology and Treatment of Eczema in Children"	400
Hauk, O. S., M.D., Central State Hospital, Nashville—"An Analysis of Metrazol Therapy, Together With a Theory of Interpretation"	353
Higginbotham, J. M., M.D., Chattanooga—"The Treatment of Fractures of the Neck of the Femur"	427

Hobson, J. J., M.D., Memphis—"Acute Rheumatic Fever"	60	Overall, James C., M.D., Nashville—"Private Practice of Public Health"	405
Jenkins, Harry H., M.D., Knoxville—"Contraception: A Medical Problem of Growing Importance"	342	Pew, J. Howard—"Planned Economies and the Medical Profession"	255
Johnson, George S., M.D., Nashville—"The Treatment of Carcinoma of the Lip"	268	Pilcher, Cobb, M.D., Nashville—"Brain Tumors in Childhood"	1
Kelly, E. G., M.D., Memphis—"The Acute Abdomen"	375	Rhea, W. G., M.D., Paris—"The Small Town Clinic Hospital—Its Place in the Community"	197
Laughlin, C. B., M.D., Greeneville—"Sulfanilamide as a Prophylaxis in Scarlet Fever" ..	223	Rippy, Elkin, M.D., Nashville—"Brain Abscess and Meningitis Caused by Type III Pneumococci—Cure with Sulfapyridine"	8
Leathers, W. S., M.D., Nashville—"A Tribute to Dr. W. D. Haggard"	84	Spruit, Charles B., Lieutenant Colonel (M. C.), General Staff Corps, United States Army; Medical Adviser to the Joint Army and Navy Selective Service Committee, Washington, D. C.—"Medical Participation in Selective Service"	382
Lorinez, B., M.D., Director of the Hospital for Women, Ujpest, Hungary—"The Functional Investigation of the Contracted Pelvis"	48	Tendler, Morton J., B.S., M.D., F.A.C.S., Memphis—"Sulfanilamide in Surgery"	300
Manier, J. O., M.D., Nashville—"Sulfanilamide and Its Compounds: Their Uses in Medicine"	296	Thompson, Willis H., M.D., Minneapolis, Minnesota—"Prothrombin Deficiency and Vitamin K in the Newborn Period"	218
Marsh, Frederick E., M.D., Chattanooga—"Case Report: Pellagra Due to Cardiospasm"	54	Tucker, C. B., M.D., Nashville—"Acquired Syphilis in Childhood—Report of a Field Study"	143
Marsh, Frederick E., M.D., Chattanooga—"The Toxic Manifestations of Sulfanilamide and Allied Drugs"	305	Turner, Edward L., M.D., Nashville—"Some Clinical Manifestations Resulting from Endameba Histolytica Infections"	203
Motley, Lyle, M.D., F.A.C.P., Memphis, Associate Professor of Medicine, University of Tennessee—"The Medical Aspects of Gall-Bladder Disease"	79	Van Etten, Nathan B., M.D., New York City—"An American Health Program"	159
Newell, E. Dunbar, M.D., Chattanooga—"The Treatment of Fractures of the Neck of the Femur"	427	Van Order, Wm. E., M.D., Chattanooga—"Contact Infections in Children"	350
Newell, Edward T., B.S., M.D., F.A.C.S., Chattanooga—"A New and Original Drainage Tube"	250	Waterhouse, Richard G., M.D., Knoxville—"Head Injuries"	432
		Witherspoon, Jack, M.D., Nashville—"Gastritis"	309

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